DATE: **October 7, 2010**

SUBJECT: **Chemicals Evaluated for Carcinogenic Potential by the Office of Pesticide Programs**

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TO: **Division Directors AD, BPPD, EFED, FEAD, HED, RD and PRD**

The attached list provides an overview of chemicals evaluated for carcinogenic potential by the Health Effects Division (HED) of the Office of Pesticide Programs (OPP) through August 2010. Applying the Agency's Guidelines for Carcinogen Risk Assessment, the classification of the chemical is made by HED's Cancer Assessment Review Committee (CARC) or, in the case of where there is no evidence of carcinogenicity, by the HED Risk Assessment Team.

This list includes the chemical name, CAS Number, PC code, the cancer classification, report date, species, tumor types, and, if required, the human equivalency potency factor (Q_1*). The potency factor (Q_1*), unless otherwise indicated, is based on the oral route. The Q_1* is expressed as $(mg/kg/day)^{-1}$ for the oral route and as $(mg/m^3)^{-1}$ for the inhalation route.

It should be noted that the evaluation of many of these chemicals is an ongoing process, therefore, the information in this list (i.e., classification and/or the quantification) may be subject to change as new and/or additional data are submitted to OPP. This list should not be used as the single source for either the classification or quantification of the carcinogenic potential. This list will be updated annually.

If further information is required please contact me (Phone: 703-308-6175; E-mail: may.brenda@epa.gov).

Chemicals Evaluated for Carcinogenic Potential
Science Information Management Branch
Health Effects Division
Office of Pesticide Programs
U.S. Environmental Protection Agency

BACKGROUND

What is this list?

The Chemicals Evaluated for Carcinogenic Potential provides an overview of the compounds evaluated for carcinogenicity by the Health Effects Division of the Office of Pesticide Programs.

NOTE: As new information becomes available, the list may become out-of-date. Therefore, it should not be used as the sole reference regarding the carcinogenic potential for a pesticide. EPA intends to update the list each year to include new evaluations or re-evaluations.

How does EPA review pesticides for potential carcinogenicity?

The Health Effects Division of the Office of Pesticide Programs performs an independent review of studies conducted in mice and rats to evaluate the carcinogenic potential of pesticides. The results of the independent review are peer-reviewed by the Cancer Assessment Review Committee. This committee recommends a cancer classification. The classification will determine how the Agency regulates the pesticide and will include methods for quantification of human risk. In some cases, EPA also requests review by the FIFRA Scientific Advisory Panel.

What factors does EPA consider in its review of cancer risk?

When assessing possible cancer risk posed by a pesticide, EPA considers how strongly carcinogenic the chemical is (its potency) and the potential for human exposure. The pesticides are evaluated not only to determine if they cause cancer in laboratory animals, but also as to their potential to cause human cancer. For any pesticide classified as a potential carcinogen, the risk would depend on the extent to which a person might be exposed (how much time and to what quantity of the pesticide). The factors considered include short-term studies, long-term cancer studies, mutagenicity studies, and structure activity concerns. (The term “weight-of-the-evidence” is used in referring to such a review. This means that the recommendation is not based on the results of one study, but on the results of all studies that are available.)

When does EPA review pesticides for potential carcinogenicity?

EPA reviews studies submitted when a pesticide is proposed for registration. Studies are required in two species (mice and rats) and two sexes (males and females). These studies are required for all pesticides used on food and some non-food pesticides that could lead to long-term exposures in humans. These studies may be reviewed again when a pesticide undergoes reregistration and the cancer classification may be reevaluated, particularly if new studies have been submitted.

Why are there several different cancer classifications in the list?

EPA's guidelines for evaluating the potential carcinogenicity of chemicals have been updated over the years to reflect increased understanding of ways chemicals may cause cancer. The current guidelines call for greater emphasis on characterization discussions for hazard, dose-response assessment, exposure assessment, and risk characterization, as well as the use of mode of action in the assessment of potential carcinogenesis.

EPA does not have the resources to re-evaluate every chemical to determine how it would be described under new guidelines, and there is no reason to re-evaluate chemicals unless there is some new information that could change the basic understanding of that chemical.

How have the guidelines changed?

EPA issued its first set of principles to guide evaluation of human cancer potential in1976. In 1986, EPA issued updated guidance, which included a letter system (A-E) for designating degree of carcinogenic potential. In the 1986 guidelines, hazard identification and the weight-of evidence process focused on tumor findings. The human carcinogenic potential of agents was characterized by a six-category alphanumeric classification system (A, B1, B2, C, and D). In 1996, EPA released "Proposed Guidelines for Carcinogen Risk Assessment," which used descriptive phrases rather than the alphanumeric classification to classify carcinogenic potential. In the 1996 classification structure, increased emphasis was placed on discussing characterization of hazard, dose-response, and exposure assessments. The hazard and weight of evidence process embraced an analysis of all relevant biological information and emphasized understanding the agent's mode of action in producing tumors to reduce the uncertainty in describing the likelihood of harm. By 1999, the science related to carcinogens had advanced significantly. EPA issued draft guidelines that continued the greater emphasis on characterization discussions for hazard, dose-response assessment, exposure assessment, risk characterization and the use of mode of action in the assessment of potential carcinogenesis. In addition, the guidelines included consideration of risk to children, as well as addressing other issues such as nuances related to the amount and adequacy of data on a chemical.

In March, 2005, EPA released its final *Guidelines for Carcinogen Risk Assessment* (EPA/630/P-03/001B). These guidelines represent the culmination of a long development process, replacing EPA's original cancer risk assessment guidelines (1986) and its interim final guidelines (1999). http://www.epa.gov/cancerguidelines/

How do the different designations compare?

The short answer is that they cannot be directly compared. Each system designation refers to the reviews and criteria it contains. A substance that is, for example, a “C” in the 1986 system may not be directly translatable to any particular category in the later systems. The designation for any substance must be considered in the context of the system under which it was reviewed.

A list of the descriptors from the various classification systems and their definitions are given on the following pages.

Carcinogenicity Classification of Pesticides:
Derivation and Definition of Terms

CLASSIFICATION-2005

The following descriptors from the 2005 Guidelines for Carcinogen Risk Assessment can be used as an introduction to the weight of evidence narrative in the cancer risk assessment. The examples presented in the discussion of the descriptors are illustrative. The examples are neither a checklist nor a limitation for the descriptor. The complete weight of evidence narrative, rather than the descriptor alone, provides the conclusions and the basis for them.

CARCINOGENIC TO HUMANS. This descriptor indicates strong evidence of human carcinogenicity. It covers different combinations of evidence.

- This descriptor is appropriate when there is convincing epidemiologic evidence of a causal association between human exposure and cancer.
- Exceptionally, this descriptor may be equally appropriate with a lesser weight of epidemiologic evidence that is strengthened by other lines of evidence. It can be used when all of the following conditions are met: (a) there is strong evidence of an association between human exposure and either cancer or the key precursor events of the agent's mode of action but not enough for a causal association, and (b) there is extensive evidence of carcinogenicity in animals, and (c) the mode(s) of carcinogenic action and associated key precursor events have been identified in animals, and (d) there is strong evidence that the key precursor events that precede the cancer response in animals are anticipated to occur in humans and progress to tumors, based on available biological information. In this case, the narrative includes a summary of both the experimental and epidemiologic information on mode of action and also an indication of the relative weight that each source of information carries, e.g., based on human information, and based on limited human and extensive animal experiments.

LIKELY TO BE CARCINOGENIC TO HUMANS. This descriptor is appropriate when the weight of the evidence is adequate to demonstrate carcinogenic potential to humans but does not reach the weight of evidence for the descriptor “Carcinogenic to Humans.” Adequate evidence consistent with this descriptor covers a broad spectrum. As stated previously, the use of the term “likely” as a weight of evidence descriptor does not correspond to a quantifiable probability. The examples below are meant to represent the broad range of data combinations that are covered by this descriptor; they are illustrative and provide neither a checklist nor a limitation for the data that might support use of this descriptor.
Moreover, additional information, e.g., on mode of action, might change the choice of descriptor for the illustrated examples. Supporting data for this descriptor may include:

- an agent demonstrating a plausible (but not definitively causal) association between human exposure and cancer, in most cases with some supporting biological, experimental evidence, though not necessarily carcinogenicity data from animal experiments;

- an agent that has tested positive in animal experiments in more than one species, sex, strain, site, or exposure route, with or without evidence of carcinogenicity in humans;
- a positive tumor study that raises additional biological concerns beyond that of a statistically significant result, for example, a high degree of malignancy, or an early age at onset;
- a rare animal tumor response in a single experiment that is assumed to be relevant to humans; or
- a positive tumor study that is strengthened by other lines of evidence, for example, either plausible (but not definitively causal) association between human exposure and cancer or evidence that the agent or an important metabolite causes events generally known to be associated with tumor formation (such as DNA reactivity or effects on cell growth control) likely to be related to the tumor response in this case.

SUGGESTIVE EVIDENCE OF CARCINOGENIC POTENTIAL. This descriptor of the database is appropriate when the weight of evidence is suggestive of carcinogenicity; a concern for potential carcinogenic effects in humans is raised, but the data are judged not sufficient for a stronger conclusion. This descriptor covers a spectrum of evidence associated with varying levels of concern for carcinogenicity, ranging from a positive cancer result in the only study on an agent to a single positive cancer result in an extensive database that includes negative studies in other species. Depending on the extent of the database, additional studies may or may not provide further insights. Some examples include:

- a small, and possibly not statistically significant, increase in tumor incidence observed in a single animal or human study that does not reach the weight of evidence for the descriptor "Likely to Be Carcinogenic to Humans." The study generally would not be contradicted by other studies of equal quality in the same population group or experimental system (see discussions of *conflicting evidence* and *differing results*, below);
- a small increase in a tumor with a high background rate in that sex and strain, when there is some but insufficient evidence that the observed tumors may be due to intrinsic factors that cause background tumors and not due to the agent being assessed. (When there is a high background rate of a specific tumor in animals of a particular sex and strain, then there may be biological factors operating independently of the agent being assessed that could be responsible for the development of the observed tumors.) In this case, the reasons for determining that the tumors are not due to the agent are explained;
- evidence of a positive response in a study whose power, design, or conduct limits the ability to draw a confident conclusion (but does not make the study fatally flawed), but where the carcinogenic potential is strengthened by other lines of evidence (such as structure-activity relationships); or
- a statistically significant increase at one dose only, but no significant response at the other doses and no overall trend.

INADEQUATE INFORMATION TO ASSESS CARCINOGENIC POTENTIAL. This descriptor of the database is appropriate when available data are judged inadequate for applying one of the other descriptors. Additional studies generally would be expected to provide further insights. Some examples include:

- little or no pertinent information;
- conflicting evidence, that is, some studies provide evidence of carcinogenicity but other studies of equal quality in the same sex and strain are negative. Differing results, that is, positive results in some studies and negative results in one or more different experimental

systems, do not constitute *conflicting evidence,* as the term is used here. Depending on the overall weight of evidence, differing results can be considered either suggestive evidence or likely evidence; or

- negative results that are not sufficiently robust for the descriptor, “Not Likely to Be Carcinogenic to Humans.”

NOT LIKELY TO BE CARCINOGENIC TO HUMANS. This descriptor is appropriate when the available data are considered robust for deciding that there is no basis for human hazard concern. In some instances, there can be positive results in experimental animals when there is strong, consistent evidence that each mode of action in experimental animals does not operate in humans. In other cases, there can be convincing evidence in both humans and animals that the agent is not carcinogenic. The judgment may be based on data such as:

- animal evidence that demonstrates lack of carcinogenic effect in both sexes in well-designed and well-conducted studies in at least two appropriate animal species (in the absence of other animal or human data suggesting a potential for cancer effects),
- convincing and extensive experimental evidence showing that the only carcinogenic effects observed in animals are not relevant to humans,
- convincing evidence that carcinogenic effects are not likely by a particular exposure route (see Section 2.3), or
- convincing evidence that carcinogenic effects are not likely below a defined dose range.

A descriptor of “not likely” applies only to the circumstances supported by the data. For example, an agent may be “Not Likely to Be Carcinogenic” by one route but not necessarily by another. In those cases that have positive animal experiment(s) but the results are judged to be not relevant to humans, the narrative discusses why the results are not relevant.

MULTIPLE DESCRIPTORS. More than one descriptor can be used when an agent's effects differ by dose or exposure route. For example, an agent may be “Carcinogenic to Humans” by one exposure route but “Not Likely to Be Carcinogenic” by a route by which it is not absorbed. Also, an agent could be “Likely to Be Carcinogenic” above a specified dose but “Not Likely to Be Carcinogenic” below that dose because a key event in tumor formation does not occur below that dose.

CLASSIFICATION -1999 Draft

The terms used to describe carcinogenic potential in the July 1999 "Review Draft of the Guidelines for Carcinogen Risk Assessment" are listed and defined as follows:

CARCINOGENIC TO HUMANS. This descriptor is appropriate when there is convincing epidemiologic evidence demonstrating causality between human exposure and cancer. This descriptor is also appropriate when there is an absence of conclusive epidemiologic evidence to clearly establish a cause and effect relationship between human exposure and cancer, but there is compelling evidence of carcinogenicity in animals and mechanistic information in animals and humans demonstrating similar mode(s) of carcinogenic action. It is used when all of the following conditions are met:

- There is evidence in a human population(s) of association of exposure to the agent with cancer, but not enough to show a causal association, and
- There is extensive evidence of carcinogenicity, and
- The mode(s) of carcinogenic action and associated key events have been identified in animals, and
- The keys events that precede the cancer response in animals have been observed in the human population(s) that also shows evidence of an association of exposure to the agent with cancer.

LIKELY TO BE CARCINOGENIC TO HUMANS. This descriptor is appropriate when the available tumor effects and other key data are adequate to demonstrate carcinogenic potential to humans. Adequate data are within a spectrum. At one end is evidence for an association between human exposure to the agent and cancer and strong experimental evidence of carcinogenicity in animals; at the other, with no human data, the weight of experimental evidence shows animal carcinogenicity by a mode or modes of action that are relevant or assumed to be relevant to humans.

SUGGESTIVE EVIDENCE OF CARCINOGENICITY, BUT NOT SUFFICIENT TO ASSESS HUMAN CARCINOGENIC POTENTIAL. This descriptor is appropriate when the evidence from human or animal data is suggestive of carcinogenicity, which raises a concern for carcinogenic effects but is judged not sufficient for a conclusion as to human carcinogenic potential. Examples of such evidence may include: a marginal increase in tumors that may be exposure-related, or evidence is observed only in a single study, or the only evidence is limited to certain high background tumors in one sex of one species. Dose-response assessment is not indicated for these agents. Further studies would be needed to determine human carcinogenic potential.

DATA ARE INADEQUATE FOR AN ASSESSMENT OF HUMAN CARCINOGENIC POTENTIAL. This descriptor is used when available data are judged inadequate to perform an assessment. This includes a case when there is a lack of pertinent or useful data or when existing evidence is conflicting, e.g., some evidence is suggestive of carcinogenic effects, but other equally pertinent evidence does not confirm a concern.

NOT LIKELY TO BE CARCINOGENIC TO HUMANS. This descriptor is used when the available data are considered robust for deciding that there is no basis for human hazard concern. The judgment may be based on:

- Extensive human experience that demonstrates lack of carcinogenic effect (e.g., phenobarbital).
- Animal evidence that demonstrates lack of carcinogenic effect in at least two well- designed and well-conducted studies in two appropriate animal species (in the absence of human data suggesting a potential for cancer effects).
- Extensive experimental evidence showing that the only carcinogenic effects observed in animals are not considered relevant to humans (e.g., showing only effects in the male rat kidney due to accumulation of $alpha_{2u}$-globulin).
- Evidence that carcinogenic effects are not likely by a particular route of exposure.
- Evidence that carcinogenic effects are not anticipated below a defined dose range.

CLASSIFICATION-1996

In April 1996, EPA released the “Proposed Guidelines for Carcinogen Risk Assessment.” This scheme varied from the earlier 1986 scheme in that it used descriptors rather than letters to classify carcinogenic potential. The descriptors are:

KNOWN/LIKELY. This category of descriptors is appropriate when the available tumor effects and other key data are adequate to convincingly demonstrate carcinogenic potential for humans.

CANNOT BE DETERMINED. This category of descriptors is appropriate when available tumor effects or other key data are suggestive or conflicting or limited in quantity and, thus, are not adequate to convincingly demonstrate carcinogenic potential for humans. In general, further agent specific and generic research and testing are needed to be able to describe human carcinogenic potential.

NOT LIKELY. This is the appropriate descriptor when experimental evidence is satisfactory for deciding that there is no basis for human hazard concern, as follows (in the absence of human data suggesting a potential for cancer effects).

CLASSIFICATION -1986

The following cancer classification scheme was first introduced in 1986. It was used until 1996.

GROUP A-HUMAN CARCINOGEN. This group is used only when there is sufficient evidence from epidemiologic studies to support a causal association between exposure to the agents and cancer.

GROUP B-PROBABLE HUMAN CARCINOGEN. This group includes agents for which the weight of evidence of human carcinogenicity based on epidemiologic studies is "limited" and also includes agents for which the weight of evidence of carcinogenicity based on animal studies is "sufficient." The group is divided into two subgroups. **Group B1** is reserved for agents for which there is limited evidence of

carcinogenicity from epidemiologic studies. **Group B2** is used for Agents for which there is "sufficient: evidence from animal studies and for which there is “inadequate evidence" or "no data" from epidemiologic studies.

GROUP C-POSSIBLE HUMAN CARCINOGEN. This group is used for agents with limited evidence of carcinogenicity in animals in the absence of human data.

GROUP D-NOT CLASSIFIABLE AS TO HUMAN CARCINOGENICITY. This group is generally used for agents with inadequate human and animal evidence of carcinogenicity or for which no data are available.

GROUP E-EVIDENCE OF NON-CARCINOGENICITY FOR HUMANS. This group is used for agents that show no evidence for carcinogenicity in at least two adequate animal tests in different species or in both adequate epidemiologic and animal studies.

OTHER DEFINITIONS
Quantification of Cancer Risk - Carcinogenic Potency Factor (Q_1*)

Q_1 STAR (Q_1*) - In the classification of human or probable-human carcinogens, mathematical models are used to estimate an upper-bound excess cancer risk associated with lifetime ingestion in the diet. The data used in these estimates usually come from lifetime exposure studies in animals. The USEPA generally uses the linearized multistage model for its cancer risk assessment. This model fits linear dose-response curves to low doses and is consistent with a no-threshold model of carcinogenesis, i.e., exposure to even a very small amount of the substance produces a finite increased risk of cancer.

The linearized multistage model uses dose-response data from the most appropriate carcinogenic study to calculate a carcinogenic potency factor (q_1*) for humans. The q_1* is then used to determine the concentrations of the chemical in the diet that are associated with theoretical upperbound excess lifetime cancer risks of 1 in 10,000, 1 in 100,000, and 1 in 1,000,000 (10^{-4}, 10^{-5}, 10^{-6} respectively) individuals over a lifetime of exposure.

Mode of Action (MOA) - The key cellular and biochemical events that have to happen for a biological effect to develop. Mode of action is contrasted with mechanism of action which is a more complete understanding of the step by step pathway leading to a biological effect. Some established MOAs include:

Androgen Dependent - The chemical disrupts the normal levels of reproductive hormones (e.g., testosterone, luteinizing hormone) which in turn stimulates the target tissue (e.g., leydig cells, testicular tissue) to divide which may lead to hyperplasia and neoplasia. For agents to pose a hazard to humans by this MOA, sufficient exposure levels need to be encountered which produce the same level of biological effect as seen in rodents. This is consistent with the MOA for Leydig cell tumorigenesis.

Cytotoxicity and Regenerative Proliferation - Continuous exposure to a chemical or its metabolite causes persistent cell killing which in turn may result in a persistent regenerative proliferative response in the damaged tissue. For irreversible tissue alterations to occur in humans, including cancer by this mode of action, a sufficient exposure must be encountered over a prolonged period.

Mitogenesis - Mitogenic chemicals act by promoting the clonal expansion of preneoplastic cells by stimulating cell proliferation. This mode of action is frequently found in the rodent liver where it is generally associated with an increase in metabolizing enzymes. A mitogenic chemical stimulates cell proliferation in the target organ without obvious cytotoxicity or cell death. Another important feature of this MOA is that the mitogenic effect is not persistent over time; instead it is resolved and then is manifested within proliferative foci which are considered preneoplastic lesions. Through continuous exposure, it is these preneoplastic lesions that develop into tumors. At this time, the adverse health effects caused by this MOA are presumed to be relevant to humans.

Mutagenesis - The chemical or a metabolite has the ability to react with or bind DNA in a manner that causes mutations. It is usually positive in multiple test systems for different genetic endpoints (particularly gene mutations and structural chromosome aberrations) and in tests performed *in vivo* and *in vitro*. Adverse health effects in rodents from these chemicals are considered relevant for human health risk.

Neuroendrocrine Disruption - Chemicals that disrupt hypothalamic control of pituitary function leading to a decrease in hormone release (e.g., luteinizing hormone) and the disruption of the ovarian cycle. This may result in an increase in cell proliferation in the mammary gland due to a hyperstimulation by estrogen. In the case of chloro-s-triazines, this neuroendocrine MOA is not considered relevant to humans because it depends on a rodent specific reproductive process.

PPAR-alpha Agonism - Chemicals that bind to and activate the Peroxisome Proliferator-Activated Receptor (PPAR) stimulate biological responses in the liver (e.g., peroxisome proliferation, induction of lipid metabolizing enzymes, oxidative stress, and hepatocyte mitogenesis). Activation of PPAR–alpha results in an increase in cell proliferation and clonal expansion of preneoplastic foci in the liver. While the human relevance of this MOA has not been definitively determined, most of the evidence indicates that this mode of action is not operative in the human liver.

Thyroid Hormone Disruption - Disruption of normal levels of thyroid hormones may lead to an increase of thyroid stimulating hormone (TSH) which results in an increase in cell proliferation of the thyroid gland. If exposure is continuous in the animal, thyroid follicular cell tumors can potentially develop. However, the development of thyroid cancer by this mode of action in humans is considered unlikely since prolonged stimulation of the thyroid gland by TSH has not been associated with tumorigenesis in humans. However, this MOA is relevant as an indicator for potential noncancer health effects (e.g., goiter, neurodevelopmental, etc) due thyroid disruption in humans.

Chemicals Evaluated for Carcinogenic Potential

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CHEMICAL	CAS NO.	PC CODE	CANCER CLASSIFICATION	REPORT DATE	QUANTIFICATION METHOD	TUMOR SITES/ STRAIN/ SPECIES/ SEX
1,3-dichloro-5-methylhydantoin	89415-87-2	128826	Not Likely to Be Carcinogenic to Humans	OPP (8/28/00)	NR	Not Applicable
2, 4 - DBA	94-82-6	030801	Not Likely to Be Carcinogenic to Humans	OPP (6/13/03)	NR	Not Applicable
2,4-D + Salts & Esters	94-75-7	030001	Group D--Not Classifiable as to Human Carcinogenicity	OPP (1/29/97)	NR	Not Applicable
2-Benzyl-4-chlorophenol	120-32-1	062201	Group C--Possible Human Carcinogen	OPP (9/5/95)	RfD Approach	Renal tubule combined adenomas/carcinomas; B6C3F1 mice (M). Renal transitional cell carcinomas; F344/N rats (F)
4-aminopyridine	504-24-5	069201	Group D--Not Classifiable As To Human Carcinogenicity	8/6/2007	NR	Not Applicable
Acephate	30560-19-1	103301	Group C--Possible Human Carcinogen	OPP (5/8/85)	NR	Hepatocellular carcinomas; CD-1 mice (F)
Acequinocyl	57960-19-7	006329	Not Likely to Be Carcinogenic to Humans	OPP (11/13/03)	NR	Not Applicable
Acetamide	60-35-5	111101	Group C--Possible Human Carcinogen	OPP (5/29/90)	NR	Liver tumors; Wistar rats (M); F344 rats (M & F).
Acetamiprid	135410-20-7	099050	Not Likely to Be Carcinogenic to Humans	OPP (12/11/01)	NR	Not Applicable
Acetochlor	34256-82-1	121601	Suggestive Evidence of Carcinogenic Potential	OPP (6/30/04)	RfD Approach	Benign pulmonary adenomas (M & F) and ovarian histiocytic sarcomas (F) CD-1 mice
Acibenzolar-S-methyl	135158-54-2	061402	Not Likely to Be Carcinogenic to Humans	OPP (12/9/99)	NR	Not Applicable
Acifluorfen sodium	62476-59-9	114402	Multiple Descriptors: Likely to be Carcinogenic to Humans at High Doses Not Likely to be Carcinogenic to Humans at Low Doses	OPP (5/21/03)	MOE Approach	Liver; B6C3F1 & CD-1 mice (M & F).
Acrinathrin	101007-06-1	129141	Group D--Not Classifiable as to Human Carcinogenicity	OPP (7/15/96)	NR	Not Applicable
ADBAC	68424-85-1	069105	Not Likely to Be Carcinogenic to Humans	OPP (11/18/99)	NR	Not Applicable

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Alachlor	15972-60-8	090501	Multiple Descriptors: Likely to be Carcinogenic to Humans (High Doses); Not Likely to be Carcinogenic to Humans (Low Doses)	OPP (6/27/97)	MOE Approach	Increased incidences of malignant & combined benign/malignant multiple tumor types in both sexes; Long Evans rat
Aldicarb	116-06-3	098301	Group E--Evidence of Non-carcinogenicity for Humans	OPP) (9/15/98)	NR	Not Applicable
Ametryn	834-12-8	080801	Data Are Inadequate for an Assessment of Human Carcinogenic Potential		NR	Not Applicable
Amicarbazone	129909-90-6	114004	Not Likely To Be Carcinogenic To Humans	8/10/2005	NR	Not Applicable
Aminocyclopyrachlor	858956-35-1, 858954-83-3,	288008	Not Likely To Be Carcinogenic To Humans	3/17/2010	NR	Not applicable
Aminopyralid	150114-71-9	005100	Not Likely To Be Carcinogenic To Humans	10/22/2009	NR	Not Applicable
Amitraz	33089-61-1	106201	Suggestive Evidence of Carcinogenic Potential	OPP (10/31/90)	NR	Lymphoreticular tumors; CFLP mice (F). Hepatocellular adenomas, carcinomas & adenomas/carcinomas combined; B6C3F1 mice (F); Lung adenomas; B6C3F1 mice (M).
Amitrole	61-82-5	004401	Multiple Descriptors: Not Likely To Be Carcinogenic To Humans At Doses That Do Not Alter Rat Thyroid Hormone Homeostasis	OPP (8/20/90)	NR	Thyroid, liver & pituitary tumors in Charworth Farms, Fischer 344 & Wistar rats (M & F). Liver & thyroid tumors in B6C3F1 & NMRI mice (M & F). Anti-thyroid MOA.
Aquashade	2650-18-2	110301	Not Likely To Be Carcinogenic To Humans	9/27/2005	NR	Not Applicable
Asulam	3337-71-1	106901	Group C--Possible Human Carcinogen	OPP (2/17/88)	NR	Malignant thyroid C-cell tumors; Benign adrenal pheochromocytomas; Sprague-Dawley rats (M).
Atrazine	1912-24-9	080803	Not Likely to be Carcinogenic to Humans	OPP (12/13/00)	NR	Mammary tumors; Sprague-Dawley rats (F). Neuroendocrine Distruption MOA.
Avermectin (see Emamectin Benzoate)	65195-55-3	122804	Group E--Evidence of Non-carcinogenicity for humans	OPP (6/27/96	NR	Not Applicable
Azafenidin	68049-83-2	119016	Data Are Inadequate for an Assessment of Human Carcinogenic Potential	OPP (10/18/99)	NR	Not Applicable

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Azinphos-methyl	86-50-0	058001	Not Likely to Be Carcinogenic to Humans	OPP (12/7/93)	NR	Not Applicable
Azoxystrobin	131860-33-8	128810	Not Likely to Be Carcinogenic to Humans	OPP (1/14/97)	NR	Not Applicable
Bendiocarb	22781-23-3	105201	Group E--Evidence of Non-carcinogenicity for Humans	OPP (12/16/97)	NR	Not Applicable
Benfluralin	1861-40-1	084301	Suggestive Evidence of Carcinogenicity, but Not Sufficient to Assess Human Carcinogenic Potential	OPP (12/27/01)	NR	Liver tumors in female B6C3F1 mice
Benomyl	17804-35-2	099101	Group C--Possible Human Carcinogen	OPP (09/21/00)	Q1* = 2.39 E-3 (3/4)	Liver tumors (hepatocellular adenomas & carcinomas) in 2 genetically related strains of mice (CD-1 & Swiss SPF) (M & F)
Bensulide	741-58-2	009801	Not Likely to Be Carcinogenic to Humans	OPP (6/10/97)	NR	Not Applicable
Bentazon	25057-89-0	275200	Group E--Evidence of Non-carcinogenicity for Humans	OPP (11/10/93)	NR	Not Applicable
Benthiavalicarb-isopropyl	177406-68-7	098379	Likely to be Carcinogenic to Humans		Q1* = 6.2795 E-2 (3/4)	Liver tumors (M &F); thyroid follicular cell tumors (M) in B6C3F1 Mice Malignant uterine tumors (F) in Fisher 344 Rat
Beta Cyfluthrin	68359-37-5	118831	Not Likely To Be Carcinogenic To Humans	1/27/2010	NR	Not Applicable
Bifenazate	149877-41-8	000586	Not Likely to Be Carcinogenic to Humans	OPP (8/28/01)	NR	Not Applicable
Bifenthrin	82657-04-3	128825	Group C--Possible Human Carcinogen	OPP (4/29/92)	RfD Approach	Hemangiopericytomas in the urinary bladder; Hepatocellular carcinomas & combinded hepatocellular adenomas & carcinomas; Swiss Webster mice (M)
Bioallethrin	584-79-2	004003	Suggestive Evidence of Carcinogenicity, but Not Sufficient to Assess Human Carcinogenic Potential	OPP (10/29/03)	NR	Renal tubular adenomas in male Sprague-Dawley Crl-CD-SD(BR) rats
Bispyrabac Sodium	125401-92-5	078906	Not Likely to Be Carcinogenic to Humans	OPP (8/2/01)	NR	Not Applicable
Bitertanol	55179-31-2	117801	Not Likely To Be Carcinogenic To Humans	11/30/2005	NR	Not Applicable
Borax	1303-96-4	011102	Group E--Evidence of Non-carcinogenicity for humans	OPP (11/24/93)	NR	Not Applicable

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Boric acid	10043-35-3	011001	Group E--Evidence of Non-carcinogenicity for humans	OPP (11/24/93)	NR	Not Applicable
Boron	7440-42-8	128945	Group E--Evidence of Non-carcinogenicity for humans	OPP (11/24/93)	NR	Not Applicable
Boscolid	188425-85-6	128008	Suggestive Evidence of Carcinogenicity, but Not Sufficient to Assess Human Carcinogenic Potential	OPP (9/25/02)	NR	Thyroid follicular cell adenomas, male and female Wistar rats.
Bromacil	314-40-9	012301	Group C--Possible Human Carcinogen	OPP (1/13/93)	RfD Approach	Liver tumors (carcinomas & combined adenomas/carcinomas); CD-1 mice (M). Thyroic tumors (C-cell adenomas & follicular cell combined adenomas/carcinomas); Crl:CD (BR) rats (M).
Bromoxynil	1689-84-5	035301	Group C--Possible Human Carcinogen	OPP (3/12/97)	Q1* = 1.03 E-1 (3/4)	Statistically significant increases in hepatocellular adenomas and/ or carcinomas and combined adenomas/carcinomas; CD-1 mice (M & F).
Bromuconazole	116255-48-2	120503	Group E--Evidence of Non-carcinogenicity for humans	OPP (4/24/95)	NR	Not Applicable
Bronopol	52-51-7	216400	Group E--Evidence of Non-carcinogenicity for humans	OPP (6/16/95)	NR	Not Applicable
Buprofezin	69327-76-0	275100	Suggestive Evidence of Carcinogenicity, but Not Sufficient to Assess Human Carcinogenic Potential	OPP (3/15/00)	NR	Significant increase by pair-wise comparison w/the controls for combined hepatocellular adenomas/carcinomas in females; CD-1 mice
Butachlor	23184-66-9	112301	Likely to be Carcinogenic to Humans	OPP (2/26/99)	NR	Multiple tumors in multiple sites in Sprague-Dawley rats including rare stomach tumors in F, rare kidney tumors in M & F, as well as tumors of the nasal mucosa and thyroid glands in M & F.
Butafenacil	134605-64-4	122004	Not Likely to Be Carcinogenic to Humans	OPP (7/11/03)	NR	Not Applicable
Butylate	2008-41-5	041405	Group E--Evidence of Non-carcinogenicity for humans	OPP (11/25/92)	NR	Not Applicable
Cacodylic acid	75-60-5	012501	Group B--Probable Human Carcinogen	OPP (12/14/99)	Q1* = 6.23 E-2 (3/4)	Urinary bladder tumor; Fischer 344 rats (M & F). Fibrosarcomas (multiple organs); B6C3F1 mice (F). This chemical is currently under Agency re-review.
Cadusafos	95465-99-9	128864	Group E--Evidence of Non-carcinogenicity for humans	OPP (5/28/92)	NR	Not Applicable

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Captafol	2939-80-2	081701	Group B--Probable Human Carcinogen	OPP (5/15/89)	Q1* = 5.1 E-2 (2/3)	Lymphosarcomas & hemangiosarcomas (M & F), harderian gland adenomas (M) CD-1 mice. Mammary fibroadenoma (M & F), renal adenomas/carcinomas (combined) (M); Sprague-Dawley rats (M).
Captan	133-06-2	081301	Multiple Descriptors: Likely at prolonged, high-level exposures, but not likely at dose levels that do not cause cytotoxicity and regenerative cell hyperplasia	OPP (9/4/98)	NR	Intestinal adenomas and adenocarcinomas in CD-1 mice (M & F).
Carbaryl	63-25-2	056801	Likely to be Carcinogenic to Humans	OPP (2/12/02)	Q1* = 8.75 E-4 (3/4)	Hemangiosarcomas (malignant vascular tumors) & combined hemagiomas/ hemangiosarcomas; CRL:CD-1 (ICR)BR mice (M).
Carbendazim (MBC)	10605-21-7	128872	Group C--Possible Human Carcinogen	OPP (4/7/89)	Q1* = 2.39 E-3 (3/4)	genetically related strains of mice (CD-1 & Swiss SPF) (M & F).
Carbofuran	1563-66-2	090601	Not Likely to Be Carcinogenic to Humans	OPP (6/17/97)	NR	Not Applicable
Carboxin	5234-68-4	090201	Not Likely to Be Carcinogenic to Humans	OPP (6/5/03)	NR	Not Applicable
Carfentrazone-ethyl	128639-02-1	128712	Not Likely to Be Carcinogenic to Humans	OPP (3/24/98)	NR	Not Applicable
Chlorantraniliprole	500008-45-7	090100	Not Likely To Be Carcinogenic To Humans	1/20/2010	NR	Not Applicable
Chlordimeform	6164-98-3	059701	Group B--Probable Human Carcinogen	OPP (12/20/85)	Q1* = 1.29 E-1 (3/4)	Malignant hemangioendothelomas; Tif:MAG:SPF mice (M & F).
Chlorethoxyfos	54593-83-8	129006	Group D--Not Classifiable as to Human Carcinogenicity	OPP (3/9/95)	NR	Not Applicable

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Chlorfenapyr	122453-73-0	129093	Suggestive Evidence of Carcinogenicity, but Not Sufficient to Assess Human Carcinogenic Potential	OPP (3/18/03)	NR	Liver tumors (adenomas and combined adenomas/carcinomas, due mainly to adenomas), malignant histiocytic sarcomas, and testicular cell tumors in male rats and uterine polyps in female rats
Chlorimuron-ethyl	90982-32-4	128901	Not Likely To Be Carcinogenic To Humans	9/14/2009	NR	Not Applicable
Chloroaniline, p-	106-47-8	017203	Group B--Probable Human Carcinogen	OPP (4/27/95)	Q1* = 1.12 E-1 (3/4)	Spleen (fibrosarcomas, hemangiosarcomas & osteosarcomas) (M); Adrenal (pheochromocytomas) (M & F); F344/N rats. Hepatocellular adenomas/carcinomas (M); Hemangiosarcomas in spleen and/or liver (M) in B6C3F1 mice.
Chloroneb	2675-77-6	027301	Data Are Inadequate for an Assessment of Human Carcinogenic Potential	OPP (12/18/03)	NR	Not Applicable
Chloropicrin	76-06-2	081501	Not Likely To Be Carcinogenic To Humans		NR	Not Applicable
Chlorothalonil	1897-45-6	081901	Group B--Probable Human Carcinogen	OPP (10/27/97)	Q1* = 7.66 E-3 (3/4)	Renal adenomas & carcinomas, both sexes of rats & mice; rarity of the tumor response in the kidney; papillomas and/or carcinomas of the forestomach in rats & mice; CD-1 mice; Fischer 344 & Osborne-Mendel rats.
Chlorpropham	101-21-3	018301	Group E--Evidence of Non-carcinogenicity for humans	OPP (10/11/94)	NR	Not Applicable
Chlorpyrifos	2921-88-2	059101	Group E--Evidence of Non-carcinogenicity for humans	OPP (11/23/93)	NR	Not Applicable
Chlorpyrifos methyl	1351032	059102	Not Likely to Be Carcinogenic to Humans	OPP (5/17/99)	NR	Not Applicable
Chlorsulfuron	64902-72-3	118601	Group E--Evidence of Non-carcinogenicity for humans	OPP (7/17/02)	NR	Not Applicable
Chlorthal-dimethyl (DCPA)	1861-32-1	078701	Group C--Possible Human Carcinogen	OPP (2/10/95)	Q1* = 1.49 E-3 (3/4)	Thyroid tumors (M & F); Hepatocellular adenoma/carcinoma/hepato- choloangiocarcinoma (F); Sprague-Dawley rats. Hepatocellular adenomas & combined adenoma/carcinoma; CD-1 mice (F).
Clethodim	99129-21-2	121011	Not Likely To Be Carcinogenic To Humans	2/24/2010	NR	Not Applicable
Clodinafop-propargyl	105512-06-9	125203	Suggestive Evidence of Carcinogenic Potential	OPP (12/7/99)	NR	Prostate gland adenomas at high dose can not be discounted. Peroxisome proliferation - activated receptor antagonism MOA for liver tumors in mice.

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Clofencet (MON 21200)	82697-71-0	128726	Group C--Possible Human Carcinogen	OPP (7/23/96)	RfD Approach	Statistically significant increase in histiocytic sarcomas (F); CD-1 mice.
Clofentezine	74115-24-5	125501	Group C--Possible Human Carcinogen	OPP (4/3/90)	Q1* = 3.76 E -2 (3/4)	Increased incidence of benign & malignant thyroid follicular cell adenoma/carcinoma in male Sprague-Dawley rat
Clomazone	81777-89-1	125401	Not Likely to Be Carcinogenic to Humans	OPP (1/31/01)	NR	Not Applicable
Clopyralid	1702-17-6	117403	Not Likely to Be Carcinogenic to Humans	OPP (12/20/99)	NR	Not Applicable
Cloquintocet-mexyl	99607-70-2	700099	Not Likely to Be Carcinogenic to Humans	OPP (11/24/98)	NR	Not Applicable
Cloransulam-methyl	147150-35-4	129116	Group E--Evidence of Non-carcinogenicity for humans	OPP (9/30/97)	NR	Not Applicable
Clothianidin	210880-92-5	044309	Not Likely to Be Carcinogenic to Humans	OPP (1/6/03))	NR	Not Applicable
Cocamide Diethanolamine	68603-42-9	224600	Likely to be Carcinogenic to Humans	OPP (7/25/01)	Q1* = 4.01 E-1 (3/4)	Liver adenomas, carcinomas hepatoblastomas; B6C3F1 mice (M & F) and kidney tumors (F)
Coumaphos	56-72-4	036501	Not Likely to Be Carcinogenic to Humans	OPP (6/25/99)	NR	Not Applicable
Cresol, p-Chloro-m-	59-50-7	064206	Group D--Not Classifiable as to Human Carcinogenicity	OPP (11/28/95)	NR	Not Applicable
Cryolite	15096-52-3	075101	Group D--Not Classifiable as to Human Carcinogenicity	OPP (1/26/93)	NR	Not Applicable
Cumyluron	99485-76-4	027902	Suggestive Evidence Of Carcinogenic Potential	8/28/2008	NR	Liver adenomas in B6C3F1 Mouse (M & F)
Cyanazine	21725-46-2	100101	Group C--Possible Human Carcinogen	OPP (7/30/91)	Q1* = 1.01 E-0 (2/3)	Mammary gland tumors (adenocarcinoma, carcinosarcoma); Sprague- Dawely rat (F).
Cyazofamid	120116-88-3	085651	Not Likely To Be Carcinogenic To Humans	4/7/2010	NR	Not Applicable
Cyclanilide	113136-77-9	026201	Not Likely to Be Carcinogenic to Humans	OPP (4/9/97)	NR	Not Applicable
Cycloate	1134-23-2	041301	Not Likely to Be Carcinogenic to Humans	OPP (9/25/03)	NR	Not Applicable
Cyflufenamid		555550	Likely To Be Carcinogenic To Humans		Q1* = 6.61 E -3 (3/4)	Thyroid Follicular Cell Crl:CD Rat (M); Liver CD-1 Mouse (M)
Cyfluthrin	68359-37-5	128831	Not Likely to Be Carcinogenic to Humans	OPP (2/11/01)	NR	Not Applicable

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Cyhalofop-butyl	122008-85-9	082583	Not Likely To Be Carcinogenic To Humans	1/8/2009	NR	Not Applicable
Cyhalothrin	68085-85-8	128867	Group D--Not Classifiable as to Human Carcinogenicity	OPP (9/15/94)	NR	Not Applicable
Cyhexatin	13121-70-5	101601	Data Are Inadequate for an Assessment of Human Carcinogenic Potential	OPP (8/1/00)	NR	Not Applicable
Cymoxanil	57966-95-7	129106	Not Likely to Be Carcinogenic to Humans	OPP (1/21/98)	NR	Not Applicable
Cypermethrin	52315-07-8	109702	Group C--Possible Human Carcinogen	OPP (9/27/88)	NR	Benign lung adenomas (increase in both adenomas and adenomas/ carcinomas combined); Alderly Park SPF Swiss strain mice (F).
Cyproconazole	94361-06-5	128993	Group B--Probable Human Carcinogen	OPP (12/04/92)	Q1* = 1.58 E-1 (3/4)	Hepatocellular adenomas & carcinomas; CD-1 mice (M & F).
Cyprodinil	121552-61-2	288202	Not Likely to Be Carcinogenic to Humans	OPP (1/14/98)	NR	Not Applicable
Cyprosulfamide	221667-31-8	877400	Not Likely To Be Carcinogenic To Humans at doses that do not cause urothelium cytotoxicity		NR	No applicable
Cyromazine	66215-27-8	121301	Group E--Evidence of Non-carcinogenicity for humans	OPP (1/6/95)	NR	Not Applicable
Daminozide	1596-84-5	035101	Group B--Probable Human Carcinogen	OPP (9/27/91)	Q1* = 8.7 E-3 (2/3)	Multiple sites (eg. lungs, vessels, liver & kidney); Multiple species, strains & studies.
Dantochlor (BCDMH)	118-52-5	028501	Not Likely to Be Carcinogenic to Humans	OPP (8/14/2000)	NR	Not Applicable
Dazomet	533-74-4	035602	Group D--Not Classifiable as to Human Carcinogenicity	OPP (12/7/93)	NR	Not Applicable
DEET	134-62-3	080301	Group D--Not Classifiable as to Human Carcinogenicity	OPP (1/4/96)	NR	Not Applicable
Deltamethrin	52918-63-5	097805	Not Likely to Be Carcinogenic to Humans	OPP (9/9/03)	NR	Not Applicable

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Desmedipham	13684-56-5	104801	Group E--Evidence of Non-carcinogenicity for humans	OPP (7/26/94)	NR	Not Applicable
Diazinon	333-41-5	057801	Not Likely to Be Carcinogenic to Humans	OPP (6/17/97)	NR	Not Applicable
Dicamba	1918-00-9	029801	Group D--Not Classifiable as to Human Carcinogenicity	OPP (7/29/96)	NR	Not Applicable
Dichlobenil	1194-65-6	027401	Group C--Possible Human Carcinogen	OPP (7/18/95)	RfD Approach	Adenomas alone & in combined adenoma/carcinoma at the HDT only (F); Hepatocellular adenomas and carcinomas, alone and combined (M & F); Fischer 344 rats.
Dichlormid	37764-25-3	900497	Not Likely To Be Carcinogenic To Humans	11/15/2005	NR	Not Applicable
Dichlorobenzamide, 2,6-	2008-88-4	027402	Group D--Not Classifiable as to Human Carcinogenicity	OPP (11/28/95)	NR	Not Applicable
Dichlorvos	62-73-7	084001	Suggestive Evidence of Carcinogenicity, but Not Sufficient to Assess Human Carcinogenic Potential	OPP (3/1/00)	NR	Mononuclear cell leukemia in male rats and forestomach tumors (squamous cell papilloma and/or carcinoma) in female mice.
Diclofop-methyl	51338-27-3	110902	Likely to be Carcinogenic to Humans	OPP (5/24/00)	Q1* = 7.36 E-2 (3/4)	Liver tumors were seen in both sexes of two species including both benign & malignant liver tumors in Wistar rats & B6C3F1
Dicloran	99-30-9	031301	Suggestive Evidence Of Carcinogenic Potential	5/11/2006	NR	Testes Wistar (Hsd Cpb:WU) Rat (M)
Diclosulam	145701-21-9	129122	Not Likely to Be Carcinogenic to Humans	OPP (11/9/99)	NR	Not Applicable
Dicofol	115-32-2	010501	Group C--Possible Human Carcinogen	OPP (4/15/92)	NR	Liver tumors (adenomas) in B6C3F1 mice (M)
Dicrotophos	141-66-2	035201	Suggestive Evidence of Carcinogenicity, but Not Sufficient to Assess Human Carcinogenic Potential	OPP (10/18/99)	NR	Increasing trend for thyroid follicular cell adenomas; C57BL/10 J CD-1 Alpk mice (M & F)
Didecyl dimethyl ammonium chloride (DDAC)	7173-51-5	069149	Group E--Evidence of Non-carcinogenicity for Humans	OPP (4/11/00)	NR	Not Applicable

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Difenoconazole	119446-68-3	128847	Group C--Possible Human Carcinogen	OPP (7/27/94)	MOE Approach	Statistically significant increases in liver adenomas, carcinomas & combined adenomas/carcinomas; CD-1 mice (M & F).
Difenzoquat methyl sulfate	43222-48-6	106401	Group E--Evidence of Non-carcinogenicity for humans	OPP (5/24/94)	NR	Not Applicable
Diflubenzuron	35367-38-5	108201	Group E--Evidence of Non-carcinogenicity for humans	OPP (4/27/95)	NR	Not Applicable
Diflufenzopyr Sodiium	109293-98-3	005107	Not Likely to Be Carcinogenic to Humans	OPP (10/6/98)	NR	Not Applicable
Dimethenamid	87674-68-8	129051	Group C--Possible Human Carcinogen	OPP (9/15/95)	RfD Approach	Statistically significant increasing trend for benign combined and/ or malignant liver tumors; Sprague-Dawley rat (M). Unresolved issues regarding nasal tumors, strong mutagenicity data & SAR.
Dimethipin	55290-64-7	118901	Group C--Possible Human Carcinogen	OPP (1/5/90)	NR	Lung adenomas & carcinomas; CD-1 mice (M)
Dimethoate	60-51-5	035001	Group C--Possible Human Carcinogen	OPP (8/29/91)	RfD Approach	Hemolymphoreticular tumors; B6C3F1 mice (M). Spleen (hemangioma & hemangiosarcoma) skin (hemangiosarcoma), lymph (angioma and angiosarcoma) tumors; Wistar rats (M).
Dimethomorph	110488-70-5	268800	Not Likely to Be Carcinogenic to Humans	OPP (5/11/98)	NR	Not Applicable
Dimethoxane	828-00-2	001001	Suggestive Evidence of Carcinogenic Potential	OPP (12/21/00)	NR	Neoplastic lesions in forestomach of mice
Dimethyl ether	115-10-6	900382	Group D--Not Classifiable as to Human Carcinogenicity	OPP (1/12/94)	NR	Not Applicable
Dimethylhydantoin	16079-88-2	006315	Not Likely to Be Carcinogenic to Humans	OPP (8/28/00)	NR	Not Applicable
Dinocap	39300-45-3	036001	Group E--Evidence of Non-carcinogenicity for Humans	OPP (6/22/94)	NR	Not Applicable
Dinoseb	88-85-7	037505	Group C--Possible Human Carcinogen	OPP (6/19/86)	NR	Liver adenomas; CD-1 mice (F).
Dinotefuran	165252-70-0	044312	Not Likely to Be Carcinogenic to Humans	OPP (3/5/04)	NR	Not Applicable
Diphenylamine	122-39-4	038501	Not Likely to Be Carcinogenic to Humans	OPP (4/1/97)	NR	Not Applicable
Diquat dibromide	85-00-7	032201	Group E--Evidence of Non-carcinogenicity for Humans	OPP (5/12/94)	NR	Not Applicable

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Disodium methanearsonate	144-21-8	013802	Not Likely to Be Carcinogenic to Humans	OPP (7/26/00)	NR	Not Applicable
Disulfoton	298-04-4	032501	Group E--Evidence of Non-carcinogenicity for Humans	OPP (4/21/97)	NR	Not Applicable
Dithianon	3347-22-6	099201	Suggestive Evidence of Carcinogenic Potential		NR	Kidney tumors (adenomas) in female rats
Dithiopyr (MON 7200)	97886-45-8	128994	Group E--Evidence of Non-carcinogenicity for Humans	OPP (10/13/93)	NR	Not Applicable
Diuron	330-54-1	035505	Likely to be Carcinogenic to Humans	OPP (5/8/97)	Q1* = 1.91 E-2 (3/4)	Urinary bladder carcinomas (M&F); Kidney carcinomas (M); Wistar rat (M & F). Mammary gland carcinomas; NMRI mice (F). .
Dodine	2439-10-3	044301	Not Likely To Be Carcinogenic To Humans	1/24/2008	NR	Not Applicable
Ecolyst		069089	Not Likely to Be Carcinogenic to Humans	OPP (10/19/99)	NR	Not Applicable
Emamectin Benzoate (Deoxy Avermectin)	137512-74-4	122806	Not Likely to Be Carcinogenic to Humans	OPP (3/19/98)	NR	Not Applicable
Endosulfan	115-29-7	079401	Not Likely to Be Carcinogenic to Humans	OPP (1/31/00)	NR	Not Applicable
Endothall	145-73-3	038901	Not Likely To Be Carcinogenic To Humans	11/9/2009	NR	Not Applicable
Epoxiconazole	106325-08-0, 133855-98-8	123909	Likely to be Carcinogenic to Humans	OPP (1/24/01)	Q1* = 3.04E-2 (3/4)	Combined hepatocellular tumors in male or female C57BL/6N CrlBr mice.
Esbiothrin	28434-00-6	004007	Suggestive Evidence of Carcinogenicity, but Not Sufficient to Assess Human Carcinogenic Potential	OPP (10/29/03)	NR	Renal tubular adenomas in male Sprague-Dawley Crl-CD-SD(BR) rats
Esfenvalerate	66230-04-4	109303	Group E--Evidence of Non-carcinogenicity for Humans	OPP (7/1/96)	NR	Not Applicable
Ethaboxam	162650-77-03	090205	Suggestive Evidence of Carcinogenic Potential		NR	Treatment-related increase in only one tumor type (benign Leydig cell tumors of the testes) in one species (Sprague Dawley rat).
Ethalfluralin	55283-68-6	113101	Group C--Possible Human Carcinogen	OPP (9/14/94)	Q1* = 8.9 E-2 (3/4)	Mammary tumors (F); Suggestion of bladder tumors (F) and kidney tumors (M & F); Fischer 344 rats
Ethephon	16672-87-0	099801	Group D--Not Classifiable as to Human Carcinogenicity	OPP (5/5/94)	NR	Not Applicable

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Ethion	563-12-2	058401	Group E--Evidence of Non-carcinogenicity for humans	OPP (1/26/94)	NR	Not Applicable
Ethofumesate	26225-79-6	110601	Group D--Not Classifiable as to Human Carcinogenicity	OPP (2/24/94)	NR	Not Applicable
Ethoprop	13194-48-4	041101	Likely to be Carcinogenic to Humans	OPP (10/7/98)	Q1* = 2.81 E-2 (3/4)	Pheochromocytoma - adrenal glands (malignant); Sprague-Dawley rat rat (M); Cell carcinomas - thyroid gland; Sprague-Dawley & Fischer 344 rat (M);
Ethyl dipropylthiocarbamate (EPTC)	759-94-4	041401	Not Likely to Be Carcinogenic to Humans	OPP (8/31/99)	NR	Not Applicable
Ethylene thiourea (ETU)	96-45-7	600016	Group B--Probable Human Carcinogen	OPP (3/19/90)	Q1* = 6.01 E-2 (3/4)	Thyroid adenoma, carcinoma, & combined adenoma/carcinoma; F344 & CRCD rats (M & F). Thyroid adenomas & carcinoma, pituitary & liver tumors; B6C3F1 & C57BL/6 x AKR mice (M & F).
Etofenprox	80844-07-1	128965	Multiple Descriptors: Not Likely Below a Defined Dose Range	OPP (5/24/90)	NR	Combined thyroid follicular cell adenomas/carcinomas; Sprague-Dawley rats (M & F).
Etoxazole	153233-91-1	107091	Not Likely to Be Carcinogenic to Humans	OPP (8/7/03)	NR	Not Applicable
Famoxadone	131807-57-3	113202	Not Likely to Be Carcinogenic to Humans	OPP (4/16/03)	NR	Not Applicable
Fenamidone	161326-34-7	046679	Not Likely to Be Carcinogenic to Humans	OPP (7/12/02)	NR	Not Applicable
Fenamiphos	22224-92-6	100601	Group E--Evidence of Non-carcinogenicity for Humans	OPP (11/23/93)	NR	Not Applicable
Fenarimol	60168-88-9	206600	Not Likely to Be Carcinogenic to Humans	OPP (9/5/01)	NR	Not Applicable
Fenazaquin	120928-09-8	044501	Not Likely To Be Carcinogenic To Humans	9/30/2008	NR	Not Applicable
Fenbuconazole	114369-43-6	129011	Group C--Possible Human Carcinogen	OPP (4/15/96)	Q1* = 3.59 E-3 (3/4)	Thyroid follicular cell adenomas &/or combined adenomas/carcinomas; Sprague-Dawley rats (M). Hepatocellular carcinomas (M); Hepatocellular adenomas & combinded adenomas and/or carcinomas (F); CD-1 mice.
Fenbutatin-oxide	13356-08-6	104601	Group E--Evidence of Non-carcinogenicity for Humans	OPP (10/8/92)	NR	Not Applicable
Fenhexamide	126833-17-8	090209	Not Likely to Be Carcinogenic to Humans	OPP (3/4/99)	NR	Not Applicable

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Fenitrothion	122-14-5	105901	Group E--Evidence of Non-carcinogenicity for Humans	OPP (7/13/93)	NR	Not Applicable
Fenoxycarb	72490-01-8	125301	Likely to be Carcinogenic to Humans	OPP (12/22/97)	Q1* = 7.00 E-2 (3/4)	Lung adenomas, carcinomas & combined adenoma/carcinoma; Harderian gland adenomas; CD-1 mice (M).
Fenpropathrin	39515-41-8	127901	Not Likely to be Carcinogenic to Humans	OPP (12/22/03)	NR	Not Applicable
Fenpropidin	67306-00-7	012305	Suggestive Evidence Of Carcinogenic Potential	4/13/2009	NR	Pancreatic Islet Cells Sprague-Dawley Rat (M)
Fenpropimorph	67564-91-4	121402	Not Likely To Be Carcinogenic To Humans	10/19/2005	NR	Not Applicable
Fenpyroximate	134098-61-6	129131	Not Likely to Be Carcinogenic to Humans	OPP (2/19/97)	NR	Not Applicable
Fenthion	55-38-9	053301	Group E--Evidence of Non-carcinogenicity for Humans	OPP (3/11/96)	NR	Not Applicable
Fenvalerate	51630-58-1	109301	Group E--Evidence of Non-carcinogenicity for Humans	OPP (7/1/96)	NR	Not Applicable
Ferbam	128-04-1	034801	Likely to be Carcinogenic to Humans	OPP (4/6/00)	NR	C-cell thyroid tumors and hemangiomas; F344 & CD rats (M) Alveolar/bronchiolar adenomas & combined adenomas/carcinomas; B6C3F1 mice (F)
Fipronil	120068-37-3	129121	Group C--Possible Human Carcinogen	OPP (7/18/95)	RfD Approach	Thyroid follicular cell adenomas, carcinomas & combined adenomas/ carcinomas (M); thyroid follicular cell adenomas and combined adenomas/carcinomas (F); Charles River CD rats.
Flazasulfuron	104040-78-0	119011	Not Likely To Be Carcinogenic To Humans	11/16/2005	NR	Not Applicable
Flonicamid	158062-67-0	128016	Suggestive Evidence of Carcinogenicity, but Not Sufficient to Assess Human Carcinogenic Potential		NR	Nasolacrimal duct squamous cell carcinomas in female Wistar rats possibly treatment-related. Mitogenesis MOA accepted for lung tumors in CD-1 mive (M & F).
Florasulam	145701-23-1	129108	Not Likely To Be Carcinogenic To Humans	5/21/2009	NR	Not Applicable
Fluazifop-P-Butyl	79241-46-6	122809	Not Likely To Be Carcinogenic To Humans	9/19/2008	NR	Not Applicable

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Fluazinam	79622-59-6	129098	Suggestive Evidence of Carcinogenicity, but Not Sufficient to Assess Human Carcinogenic Potential	OPP (3/29/01)	NR	An increase in thyroid gland follicular cell tumors in male rats, and an increased incidence of hepatocellular tumors observed in the male mice was treatment-related
Flubendiamide	272451-65-7	027602	Not Likely To Be Carcinogenic To Humans	4/3/2008	NR	Not Applicable
Flucarbazone-sodium	181274-17-9	114009	Not Likely to Be Carcinogenic to Humans	OPP (7/19/00)	NR	Not Applicable
Fludioxonil	131341-86-1	071503	Group D--Not Classifiable as to Human Carcinogenicity	OPP (9/19/96)	NR	Not Applicable
Flufenacet (Thiaflumide)	142459-58-3	121903	Not Likely to Be Carcinogenic to Humans	OPP (7/16/97)	NR	Not Applicable
Flufenoxuron	101463-69-8	108203	Not Likely To Be Carcinogenic To Humans	8/15/2006	NR	Not Applicable
Flufenpyr-ethyl	188489-07-8	108853	Not Likely to Be Carcinogenic to Humans	OPP (6/8/03)	NR	Not Applicable
Flumetralin	62924-70-3	123001	Not Likely To Be Carcinogenic To Humans	6/21/2007	NR	Not Applicable
Flumetsulam (XRD-498)	98967-40-9	129016	Group E--Evidence of Non-carcinogenicity for Humans	OPP (6/23/93)	NR	Not Applicable
Flumiclorac pentyl	87546-18-7	128724	Group E--Evidence of Non-carcinogenicity for Humans	OPP (9/7/94)	NR	Not Applicable
Flumioxazin	103361-09-7, 141490-50-8	129034	Not Likely to Be Carcinogenic to Humans	OPP (2/22/01)	NR	Not Applicable
Fluometuron	2164-17-2	035503	Group C--Possible Human Carcinogen	OPP (8/28/96)	Q1* = 1.80 E-2 (3/4)	Statistically significant increases in combined adenomas/carcinomas of the lung (M); Malignant lymphocytic lymphomas (F); CD-1 mice.
Fluopicolide	239110-15-7	027412	Not Likely to Be Carcinogenic to Humans		RfD Approach	NA
Fluopyram	658066-35-4	080302	Likely To Be Carcinogenic To Humans		Q1* = 1.55 E -2 (3/4)	Thyroid Follicular Cell C57BL/6J Mouse (M); Liver Wistar Rat (F)
Fluoxastrobin	361377-29-9	028869	Not Likely To Be Carcinogenic To Humans	4/15/2010	NR	Not Applicable
Fluridone	59756-60-4	112900	Group E--Evidence of Non-carcinogenicity for Humans	OPP (7/1/85)	NR	Not Applicable

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Fluroxypyr	81406-37-3	128968	Not Likely To Be Carcinogenic To Humans	10/3/2007	NR	Not Applicable
Fluroxypyr acid (see also PC Code 128968)	69377-81-7	128959	Not Likely to Be Carcinogenic to Humans	OPP (1/28/98)	NR	Not Applicable
Flurprimidol	56425-91-3	125701	Not Likely To Be Carcinogenic To Humans	9/29/2005	NR	Not Applicable
Fluthiacet methyl	117337-19-6	108803	Likely to be Carcinogenic to Humans	OPP (12/8/98)	Q1* = 2.07 E-1 (3/4)	Pancreatic cell tumors (exocrine adenomas, islet cell adenomas, and combined islet cell tumors); Sprague-Dawley rats (M). Hepatocellular tumors (adenomas and combined adenoma/carcinoma); CD-1 mice (M & F). CD-1 mice (M & F).
Flutolanil	66332-96-5	128975	Group E--Evidence of Non-carcinogenicity for Humans	OPP (6/9/94)	NR	Not Applicable
Flutriafol	76674-21-0	128940	Not Likely To Be Carcinogenic To Humans	6/1/2009	NR	Not Applicable
Folpet	133-07-3	081601	Group B--Probable Human Carcinogen	OPP (9/4/86)	Q1* = 1.86 E-3 (3/4)	Duodenum (carcinoma & adenoma); CD-1 & B6C3F1 mice (M & F); Hyperkeratosis/acanthosis; B6C3F1 mice (M).
Fomesafen	108731-70-0	123802	Not Likely to Be Carcinogenic to Humans	OPP (8/27/86)	NR	Peroxisome proliferator-activated receptor alpha (PPARa) as the mode of action for fomesafen-induced liver tumors in mice.
Fonofos	944-22-9	041701	Group E--Evidence of Non-carcinogenicity for Humans	OPP (11/10/93)	NR	Not Applicable
Forchlorfenuron	68157-60-8	128819	Not Likely To Be Carcinogenic To Humans	3/11/2008	NR	Not Applicable
Formasulfuron	173159-57-4	122020	Not Likely to Be Carcinogenic to Humans	OPP (9/19/01)	NR	Not Applicable
Formetanate hydrochloride	23422-53-9	097301	Group E--Evidence of Non-carcinogenicity for Humans	OPP (5/20/96)	NR	Not Applicable
Fosetyl-Al	39148-24-8	123301	Not Likely	OPP (4/22/99)	NR	Not Applicable
Fosthiazate	98886-44-3	129022	Not Likely to Be Carcinogenic to Humans	OPP (9/15/03)	NR	Not Applicable

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Furiazole (MON 13900)	121776-33-8	911596	Likely to be Carcinogenic to Humans	OPP (9/21/99)	Q1* = 2.74 E-2 (3/4)	Multiple tumors were seen at multiple sites in two species including both benign & malignant liver tumors in Sprague-Dawley rats (M&F) and CD-1 mice, rare tumors such as stomach & testicular tumors in rats (M) & lung tumors in mice (M & F).
Furmecyclox	60568-05-0	122601	Group B--Probable Human Carcinogen	OPP (7/3/85)	Q1* = 2.98 E-2 (2/3)	Liver tumors (M & F); Urothelial tumors (M); Sprague-Dawley rats
Gamma Cyhalothrin	76703-62-3	128807	Not Likely to Be Carcinogenic to Humans	OPP (3/01/04)	NR	Not Applicable
Glufosinate-ammonium	77182-82-2	128850	Not Likely to Be Carcinogenic to Humans	OPP (5/17/99)	NR	Not Applicable
Glutaraldehyde	111-30-8	043901	Not Likely to Be Carcinogenic to Humans		NR	Not applicable
Glyphosate	1071-83-6	417300	Group E--Evidence of Non-carcinogenicity for Humans	OPP (12/16/91)	NR	Not Applicable
Halosulfuron methyl (MON 1200)	100784-20-1	128721	Not Likely to Be Carcinogenic to Humans	OPP (2/26/98)	NR	Not Applicable
Haloxyfop-methyl	690806-40-2	125201	Group B--Probable Human Carcinogen	OPP (9/18/89)	Q1* = 7.39 E+0 (2/3)	Liver tumors [adenomas (M), carcinomas (F) & adenomas/carcinomas (M & F)]; B6C3F1 mice.
Hexaconazole	79983-71-4	128925	Group C--Possible Human Carcinogen	OPP (1/21/99)	Q1* = 1.6 E-2 (3/4)	Benign Leydig cell tumors; Wistar (Alpk:APfSD) rat (M)
Hexazinone	51235-04-2	107201	Group D--Not Classifiable as to Human Carcinogenicity	OPP (7/27/94)	NR	Not Applicable
Hexythiazox	78587-05-0	128849	Likely To Be Carcinogenic To Humans	OPP (3/16/88)	RfD Approach	Liver (hepatocellular carcinomas & carcinomas/adenomas combined) in B6C3F1 mice (F; Mammary Gland (fibroadenomas) Fischer 344 Rat (M)
HOE107892	135590-91-9	811800	Not Likely to Be Carcinogenic to Humans	OPP (10/13/98)	NR	Not Applicable
Hydramethylnon	67485-29-4	118401	Group C--Possible Human Carcinogen	OPP (3/28/91)	RfD Approach	Lung adenomas & combined adenomas/carcinomas; CD-1 mice (F).
Hydrogen cyanamide	420-04-2	014002	Group C--Possible Human Carcinogen	OPP (9/15/93)	Q1* = 6.64 E-2 (3/4)	Ovarian granulosa-theca tumors; CRL:CD-1 (ICR)BR mice (F) [Hydrogen cyanamide]. Positive trend in hemangiosarcomas; B6C3F1 mice (M) [Calcium cyanamide].
Hydroprene	41096-46-2	486300	Group D--Not Classifiable as to Human Carcinogenicity	OPP (6/8/95)	NR	Not Applicable

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Imazalil	35554-44-0	111901	Likely to be Carcinogenic to Humans	OPP (12/7/99)	Q1* = 6.11 E-2 (3/4)	An increase (both trend and pair-wise) in combined liver adenomas/ carcinomas in male Swiss albino mice and male Wistar rats and an increase in combined thyroid follicular adenomas/carcinomas in male Wistar rats.
Imazamethabenz	81405-85-8	128842	Group D--Not Classifiable as to Human Carcinogenicity	OPP (6/11/87)	NR	Not Applicable
Imazamox	114311-32-9	129171	Not Likely to Be Carcinogenic to Humans	OPP (2/27/97)	NR	Not Applicable
Imazapic	81334-60-3	129041	Group E--Evidence of Non-carcinogenicity for Humans	OPP (9/27/95)	NR	Not Applicable
Imazapyr	81334-34-1	128821	Group E--Evidence of Non-carcinogenicity for Humans	OPP (10/5/95)	NR	Not Applicable
Imazaquin Acid	81335-37-7	128848	Not Likely To Be Carcinogenic To Humans	10/31/2005	NR	Not Applicable
Imazethapyr	81335-77-5	128922	Not Likely to Be Carcinogenic to Humans	OPP (1/31/02)	NR	Not Applicable
Imazosulfuron	122548-33-8	118602	Not Likely To Be Carcinogenic To Humans	3/13/2009	NR	Not Applicable
Imidacloprid	105827-78-9	129099	Group E--Evidence of Non-carcinogenicity for Humans	OPP (11/10/93)	NR	Not Applicable
Indaziflam	950782-86-2	080818	Not Likely To Be Carcinogenic To Humans	4/22/2010	NR	Not Applicable
Indoxacarb	173584-44-6	067710	Not Likely to Be Carcinogenic to Humans	OPP (7/17/00)	NR	Not Applicable
Iodomethane	74-88-4	000011	Multiple Descriptors: Not Likely to be Carcinogenic to Humans at doses that do not alter rat thyroid hormone homeostasis		RfD	Thyroid follicular cell tumors in male rats and mice
Iodosulfuran	144550-36-7	122021	Not Likely to Be Carcinogenic to Humans	OPP (1/5/04)	NR	Not Applicable
Ipoconazole	125225-28-7	125618	Not Likely To Be Carcinogenic To Humans	5/28/2008	NR	Not Applicable
Iprodione	36734-19-7	109801	Likely to be Carcinogenic to Humans	OPP (11/19/97)	Q1* = 4.39 E-2 (3/4)	Hepatocellular tumors (M&F); Ovarian luteomas (F); CD-1 mice. Testicular interstitial cell tumors (Leydig cell); Crl:CD(SD)BR rats (M).

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Iprovalicarb	140923-17-7	098359	Likely to be Carcinogenic to Humans	OPP (2/6/02)	Q1* = 4.47E-4 (3/4)	Osteosarcomas, (M) transitional cell papillomas of the urinary bladder (F), mixed Mullerian tumors of the uterus,(F) and follicular cell adenomas/carcinomas of the thyroid gland (F) in Wistar (Hsd/WIN:WU) rats
Isofenphos	25311-71-1	109401	Group E--Evidence of Non-carcinogenicity for Humans	OPP (1/13/98)	NR	Not Applicable
Isophorone	78-59-1	047401	Group C--Possible Human Carcinogen	OPP (9/2/99)	Q1* = 6.08 E-4 (3/4)	Preputial gland carcinomas; F344/N rats (M)
Isoxaben	82558-50-7	125851	Group C--Possible Human Carcinogen	OPP (1/4/89)	NR	Hepatocellular adenomas; B6C3F1 mice (M & F).
Isoxadifen-ethyl	163520-33-0	823000	Not Likely to Be Carcinogenic to Humans	OPP (1/29/01)	NR	Not Applicable
Isoxaflutole	141112-29-0	123000	Likely to be Carcinogenic to Humans	OPP (8/6/97)	Q1* = 1.02 E-2 (3/4)	Statistically significant increases in liver tumors in both sexes of mice & rats; statistically significant increases in thyroid tumors in male rats.
Kasugamycin	6980-18-3	230001	Not Likely To Be Carcinogenic To Humans	4/29/2009	NR	Not Applicable
Kathon 886	55965-84-9	107106	Group D--Not Classifiable as to Human Carcinogenicity	OPP (6/30/95)	MOE Approach	Not Applicable
KBR 3023	119515-38-7	070705	Not Likely to Be Carcinogenic to Humans	OPP (6/9/99)	NR	Not Applicable
Kresoxim-methyl	143390-89-0	129111	Likely to be Carcinogenic to Humans	OPP (8/19/99)	Q1* = 2.90 E-3 (3/4)	Liver tumors (hepatocellular adenomas, hepatocellular carcinomas & combined adenomas/carcinomas); Wistar rats (M & F).
Lactofen	77501-63-4	128888	Multiple Descriptors: Likely to be Carcinogenic in Humans at High Doses. Not Likely to be Carcinogenic to Humans at Low Doses	OPP (4/8/02)	MOE approach	Hepatocellular carcinomas (M); Hepatocellular adenomas & carcinomas (M & F); CD-1 mice. Liver neoplastic nodules; Sprague-Dawley rats (M & F).
Lambda cyhalothrin	91465-08-6	128897	Group D--Not classifiable as to Human Carcinogenicity	OPP (9/12/02)	NR	Not Applicable
Lindane	58-89-9	009001	Suggestive Evidence of Carcinogenicity, but Not Sufficient to Assess Human Carcinogenic Potential	OPP (11/29/01)	NR	Lung tumors (benign) in female mice only

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Linuron	330-55-2	035506	Group C--Possible Human Carcinogen	OPP (11/20/01)	NR	Testicular tumors; CD rats (M); Hepatocellular adenomas; CD-1 mice (M & F).
Malathion	121-75-5	057701	Suggestive Evidence of Carcinogenicity, but Not Sufficient to Assess Human Carcinogenic Potential	OPP (4/28/00)	NR	Occurrence of liver tumors in male & female B6C3F1 mice & in female Fischer 344 rats only at excessive doses. Presence of a few rare tumors, oral palate mucosa in F & nasal respiratory epithelium in M&F Fischer 344 rats.
Maleic hydrazide	123-33-1	051501	Group E--Evidence of Non-carcinogenicity for Humans	OPP (11/10/93)	NR	Not Applicable
Mancozeb	8018-01-7	014504	Group B--Probable Human Carcinogen	OPP (7/7/99)	Q1* = 6.01 E-2 (3/4) Based on ETU	Thyroid follicular cell adenomas & carcinomas, combined thyroid follicular cell adenomas and/or carcinomas; Crl:CD(BR) rats (M & F).
Mandipropamid	374726-62-2	036602	Not Likely To Be Carcinogenic To Humans	4/27/2010	NR	Not Applicable
Maneb	12427-38-2	014505	Group B--Probable Human Carcinogen	OPP (7/7/99)	Q1* = 6.01 E-2 (3/4) Based on ETU	Hepatocellular adenomas in M & F mice, no acceptable study in rats
MB46513 (photodegradate of Fipronil)	120067-83-6	600050	Not Likely to Be Carcinogenic to Humans	OPP (12/6/00)	NR	Not Applicable
MCPA + Salts	94-74-6	030501	Not Likely to Be Carcinogenic to Humans	OPP (10/29/03)	NR	Not Applicable
MCPB Acid	94-81-5	019201	Not Likely To Be Carcinogenic To Humans	10/1/2008	NR	Not Applicable
Mecoprop-P	16484-77-8	129046	Suggestive Evidence of Carcinogenicity, but Not Sufficient to Assess Human Carcinogenic Potential	OPP (1/15/03)	NR	Hepatocellular adenomas and carcinomas in female B6C3F1/CrlBR mice.
Mefenoxam	70630-17-0	113502	Not Likely to Be Carcinogenic to Humans	OPP (5/17/00)	NR	Not Applicable
Mefluidide	53780-34-0	114001	Not Likely To Be Carcinogenic To Humans	4/2/2007	NR	Not Applicable
Melamine	108-78-1	777201	Group D--Not Classifiable as to Human Carcinogenicity	OPP (7/29/92)	NR	Not Applicable
Mepanipyrim	110235-97-7	288203	Likely to be Carcinogenic to Humans		Q1* = 1.35 E-2 (3/4)	Benign and malignant liver tumors in Female Fisher 344 rats and both sexes of B6C3F1 mice
Mepiquat Chloride	24307-26-4	109101	Not Likely	OPP (2/19/03)	NR	Not Applicable

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Meptyldinocap (DE-126/Dinocap II)	131-72-6	036000	Group E--Evidence Of Non-Carcinogenicity For Humans	3/17/2009	NR	Not applicable
Mercaptobenzothiazole, 2-	149-30-4	051701	Group C--Possible Human Carcinogen	OPP (11/19/92)	RfD Approach	Adrenal gland tumors (M & F), some evidence of preputial gland tumors (M) & equivocal evidence for pituitary gland tumors (M); F344/N rats.
Mesosulfuron methyl	208465-21-8	122009	Not Likely to Be Carcinogenic to Humans	OPP (3/4/04)	NR	Not Applicable
Mesotrione	104206-82-8	122990	Not Likely to Be Carcinogenic to Humans	OPP (4/12/01)	NR	Not Applicable
Metaflumizone	139968-49-3	281250	Not Likely To Be Carcinogenic To Humans	1/26/2010	NR	Not Applicable
Metalaxyl	57837-19-1	113501	Group E--Evidence of Non-carcinogenicity for Humans	OPP (12/31/85)	NR	Not Applicable
Metaldehyde	108-62-3	053001	Suggestive Evidence of Carcinogenic Potential		NR	Benign liver tumors in female rats and both sexes of mice
Metam sodium	137-42-8	039003	Likely To Be Carcinogenic To Humans	OPP (3/21/00)	Q1* = 1.98 E-1(3/4)	Malignant angiosarcomas (by both pair-wise & trend analysis) CD-1 Mouse (M & F)
Metconazole	125116-23-6	125619	Not Likely to Be Carcinogenic to Humans		NR	Mitogenesis MOA for liver tumors in both sexes of CD-1 mice
Methamidophos	10265-92-6	101201	Not Likely to Be Carcinogenic to Humans	OPP (2/12/98)	NR	Not Applicable
Methidathion	950-37-8	100301	Group C--Possible Human Carcinogen	OPP (2/19/88)	NR	Liver tumors (benign and malignant); CD-1 mice (M).
Methiocarb	2032-65-7	100501	Group D--Not Classifiable as to Human Carcinogenicity	OPP (3/2/93)	RfD Approach	Not Applicable
Methomyl	16752-77-5	090301	Group E--Evidence of Non-carcinogenicity for Humans	OPP (10/26/96)	NR	Not Applicable
Methoxyfenozide	161050-58-4	121027	Not Likely to Be Carcinogenic to Humans	OPP (7/1/99)	NR	Not Applicable
Methyl bromide	74-83-9	053201	Not Likely	OPP (8/4/92)	NR	Not Applicable
Methyl isothiocyanate	6317-18-6	068103	Group B--Probable Human Carcinogen	OPP (2/2200)	Q1* = 1.98 E-1 (3/4)	Based on Metam Sodium data: Malignant angiosarcomas (by both pair-wise & trend analysis); C57BL/10JfCD-1/Alpk mice (M & F). Malignant hemangiosarcomas; Hsd/Ola: Wistar rats (M).
Methyl parathion	298-00-0	053501	Not Likely to Be Carcinogenic to Humans	OPP (12/1/97)	NR	Not Applicable

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Metiram	9006-42-2	014601	Group B--Probable Human Carcinogen	OPP (7/7/99)	Q1* = 6.01 E-2 (3/4) Based on ETU	Thyroid follicular cell adenomas & carcinomas, combined thyroid follicular cell adenomas and/or carcinomas; Crl:CD(BR) rats (M & F).
Metofluthrin	240444-70-6	109709	Likely to be Carcinogenic to Humans		Q1* = 1.62 E -2 (3/4)	Liver tumors in M&F Wistar rats.
Metolachlor	51218-45-2	108801	Group C--Possible Human Carcinogen	(OPP (11/16/94)	MOE Approach	Liver adenomas and combined adenomas/carcinomas; Charles River CD (SD)BR rats (F).
Metrafenone	220899-03-6	000325	Suggestive Evidence of Carcinogenic Potential		NR	Benign Liver Tumors in Male CD-1 Mice
Metribuzin	21087-64-9	101101	Group D--Not Classifiable as to Human Carcinogenicity	OPP (5/16/95)	NR	Not Applicable
Metsulfuron methyl	74223-64-6	122010	Not Likely to Be Carcinogenic to Humans	OPP (3/14/02)	NR	Not Applicable
Mevinphos	7786-34-7	015801	Not Likely To Be Carcinogenic To Humans	5/17/2000	NR	Not Applicable
MGK 264	113-48-4	057001	Group C--Possible Human Carcinogen	OPP (6/7/95)	RfD Approach	Statistically significant increases in hepatocellular adenomas; CD-1 mice (M & F). Statistically significant increases for thyroid follicular cell adenomas; Crl:CDBR rats (M).
MGK Replellent 326	136-45-8	047201	Group B--Probable Human Carcinogen	OPP (11/12/02)	Q1* = 1.6 E-3 (3/4)	Multiple malignant & benign tumors [liver (M & F), kidney (M & F), testes (M) & uterine (F); CD rats. Multiple malignant tumors [liver (M & F) & lung/bronchiolar tumors (M)]; CD-1 mice.
Molinate	2212-67-1	041402	Suggestive Evidence of Carcinogenicity, but Not Sufficient to Assess Human Carcinogenic Potential	OPP (12/14/00)	NR	Statistically significant increase in combined adenomas & carcinomas in the kidney; Crl:CD(SD)BR rat (M). There was equivocal evidence that Molinate induced an increase in testicular tumors.
MON 4660	71526-07-3	600046	Likely to be Carcinogenic to Humans	OPP (12/9/99)	Q1* = 4.85 E-2 (3/4)	Hepatocellular adenomas, carcinomas & combined adenomas/carcinomas; (M&F) rats & mice. Stomach squamous cell papillomas & combined papillomas/carcinomas; M rats & M&F mice. Bile duct cholangiomas/carcinomas; M rats. Bronchio alveolar adenomas, combined adenomas/ carcinomas; M mice. Sprague Dawley rats, CD 1 mice.
Monosodium acid methanearsonate (MMA)	2163-80-6	013803	Not Likely to Be Carcinogenic to Humans	OPP (7/26/00)	NR	Not Applicable

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MSMA-calcium salt	5902-95-4	013806	Not Likely to Be Carcinogenic to Humans	OPP (12/14/00)	NR	Not Applicable
Myclobutanil	88671-89-0	128857	Group E--Evidence of Non-carcinogenicity for Humans	OPP (6/16/94)	NR	Not Applicable
Naled	300-76-5	034401	Group E--Evidence of Non-carcinogenicity for Humans	OPP (8/31/94)	NR	Not Applicable
Napropamide	15299-99-7	103001	Not Likely To Be Carcinogenic To Humans	7/7/2005	NR	Not Applicable
Naptalam Sodium Salt	132-67-2	030703	Group D--Not Classifiable as to Human Carcinogenicity	OPP (9/7/94)	NR	Not Applicable
Napthalene Acetates	2122-70-5	056008	Not Likely To Be Carcinogenic To Humans	3/5/2009	NR	Not applicable.
Nicosulfuron	111991-09-4	129008	Group E--Evidence of Non-carcinogenicity for Humans	OPP (9/1/98)	NR	Not Applicable
Nitrapyrin	1929-82-4	069203	Likely to be Carcinogenic to Humans	OPP (5/5/00)	Q1* = 4.25 E-2 (3/4)	Increase in liver tumors in B6C3F M & F mice; epididymal sarcomas in M mice
Norflurazon	27314-13-2	105801	Group C--Possible Human Carcinogen	OPP (11/2/90)	NR	Statistically significant increase in comparison to controls in liver adenomas & combined liver adenomas & carcinomas, as well as the statistically significant positive trend for these hepatocellular adenomas & combined adenomas & carcinomas; CD-1 mice (M
Not Applicable	77-48-5	006317	Not Likely to Be Carcinogenic to Humans	OPP (8/28/00)	NR	Not Applicable
Novaluron	116714-46-6	124002	Not Likely to Be Carcinogenic to Humans	OPP (2/4/04)	NR	Not Applicable
Orthophenylphenol (see also PC 064104)	90-43-7	064103	Not Likely to Be Carcinogenic to Humans	OPP (8/24/94)	NR	Not Applicable
Orthophenylphenol, Sodium salt (see also PC 064103)	132-27-4	064104	Not Likely to Be Carcinogenic to Humans	OPP (8/24/94)	NR	Not Applicable
Orthosulfamuron	213464-77-3	108209	Suggestive Evidence of Carcinogenic Potential		RfD Approach	Thyroid follicular cell tumors in male Han Wistar rats.
Oryzalin	19044-88-3	104201	Likely to be Carcinogenic to Humans	OPP (5/14/03)	Q1* = 7.79 E-3 (3/4)	Multiple sites (thyroid, mammary); F344 rats (M & F).
Oxadiazon	19666-30-9	109001	Group C--Possible Human Carcinogen	OPP (5/1/01)	Q1* = 7.11 E-2 (3/4)	Liver tumors (malignant, combined malignant & benign); CD CD-1 mice (M & F), Wistar rats (M)

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Oxadixyl	77732-09-3	126701	Group C--Possible Human Carcinogen	OPP (1/4/89)	Q1* = 5.3 E-2 (2/3)	Hepatocellular adenomas (by pair-wise comparison & with a dose- related trend); Han-Wistar rats (M & F).
Oxamyl	23135-22-0	103801	Group E--Evidence of Non-carcinogenicity for Humans	OPP (11/5/96)	NR	Not Applicable
Oxydemeton-methyl	301-12-2	058702	Not Likely to Be Carcinogenic to Humans	OPP (7/24/97)	NR	Not Applicable
Oxyfluorfen	42874-03-3	111601	Likely To Be Carcinogenic To Humans	OPP (9/29/89)	Q1* = 7.32 E-2 (3/4)	Liver (adenomas, carcinomas & combined adenomas and/or carcinomas); CD-1 mice (M).
Oxytetracycline	2058-46-0	006308	Group D--Not Classifiable as to Human Carcinogenicity	OPP (12/18/92)	NR	Not Applicable
Oxythioquinox	2439-01-2	054101	Group B--Probable Human Carcinogen	OPP (2/15/96)	Q1* = 3.42 E-2 (3/4)	Lung tumors; NMRI mice (M). Hepatocellular tumors (M & F) and rare kidney tumors (F); F344 rats. Data showing chemical has clastogenic activity provided additional support.
Paclobutrazol	76738-62-0	125601	Group D--Not Classifiable as to Human Carcinogenicity	OPP (6/23/94)	NR	Not Applicable
Paradichlorobenzene	106-46-7	061501	Multiple Descriptors: Not likely at doses that don't perturb homeostasis of liver cell proliferation.	OPP (4/27/89)	NR	Liver (adenomas and carcinomas); B6C3F1 mice (M & F); Mitogenic MOA established
Paranitrophenol	100-02-7	056301	Group D--Not Classifiable as to Human Carcinogenicity	OPP (5/14/96)	NR	Not Applicable
Paraquat dichloride	1910-42-5	061601	Group E--Evidence of Non-carcinogenicity for Humans	OPP (3/15/89)	NR	Not Applicable
Parathion, ethyl-	56-38-2	057501	Group C--Possible Human Carcinogen	OPP (9/11/91)	RfD Approach	Adrenal cortical tumors (adenomas + carcinomas; Thyroid follicular cell adenomas & pancreatic cell carcinomas; Osborne-Mendel rat (M) Benign pancreatic tumors; Wistar rat (M)
Pebulate	1114-71-2	041403	Not Likely to Be Carcinogenic to Humans	OPP (12/7/98)	NR	Not Applicable
Pendimethalin	40487-42-1	108501	Group C--Possible Human Carcinogen	OPP (7/24/92)	RfD Approach	Thyroid follicular cell adenomas; Sprague-Dawley rats (M & F).

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Penoxulam	219714-96-2	119031	Suggestive Evidence of Carcinogenicity, but Not Sufficient to Assess Human Carcinogenic Potential		NR	Mononuclear Cell Leukemia (MNCL) in Fisher 344 Male Rats
Pentachloronitrobenzene (PCNB)	82-68-8	056502	Group C--Possible Human Carcinogen	OPP (12/18/92)	RfD Approach	Thyroid follicular cell adenomas (by both pair-wise and trend analysis) in males with a positive trend in females; CD rats.
Pentachlorophenol	87-86-5	063001	Group B--Probable Human Carcinogen	OPP (1/3/91)	Not Determined	Hepatocellular adenomas & carcinomas, adrenal medulla pheochromocytomas & malignant pheochromocytomas, &/or hemangiosarcomas & hemangiomas in one or both sexes of B6C3F1 mice.
Permethrin	52645-53-1	109701	Likely to be Carcinogenic to Humans	OPP (10/23/02)	Q1* = 9.567 E-3 (3/4)	Lung (benign) tumors in female and liver tumors in both sexes of CD-1 mice.
Phenmedipham	13684-63-4	098701	Group D--Not Classifiable as to Human Carcinogenicity	OPP (4/28/93)	NR	Not Applicable
PHMB	32289-58-0	111801	Suggestive Evidence of Carcinogenicity, but Not Sufficient to Assess Human Carcinogenic Potential	OPP (4/9/03)	NR	Vascular tumors in female Wistar rats, male & female C5B1/10JfCD-1/Alpk mice following oral exposure; vascular tumors in female Alderley Park mice following dermal exposure.
Phorate	298-02-2	057201	Group E--Evidence of Non-carcinogenicity for Humans	OPP (12/30/93)	NR	Not Applicable
Phosalone	2310-17-0	097701	Not Likely to Be Carcinogenic to Humans	OPP (8/12/99)	NR	Not Applicable
Phosmet	732-11-6	059201	Suggestive Evidence of Carcinogenicity, but Not Sufficient to Assess Human Carcinogenic Potential	OPP (10/27/99)	NR	Increase (both trend & pair-wise) in combined liver adenomas/carcin- omas in male B6C3F1 mice but only trends for increase of liver adenomas/carcinomas & mammary adenocarcinomas in female B6C3F1 mice. There was no evidence of carcinogenicity in an acceptable rat study.
Phosphamidon	13171-21-6	018201	Group C--Possible Human Carcinogen	OPP (5/31/89)	NR	Bladder transitional cell carcinoma; Hepatocellular carcinoma; Sprague-Dawley rats (M).
Phostebupirim	96182-53-5	129086	Group E--Evidence of Non-carcinogenicity for Humans	OPP (4/27/97)	NR	Not Applicable
Picloram Acid	1918-02-1	005101	Group E--Evidence of Non-carcinogenicity for Humans	OPP (2/10/89)	NR	Not Applicable

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Picloram Acid Ethylhexyl Ester	2545-60-0	005103	Group E--Evidence of Non-carcinogenicity for Humans	OPP (2/10/89)	NR	Not Applicable
Picloram Acid Potassium Salt	35832-11-2	005104	Group E--Evidence of Non-carcinogenicity for Humans	OPP (2/10/89)	NR	Not Applicable
Picloram Acid Triisopropanolamine Salt	6753-47-5	005102	Group E--Evidence of Non-carcinogenicity for Humans	OPP (2/10/89)	NR	Not Applicable
Pinoxaden	293973-20-8	147500	Data Are Inadequate for an Assessment of Human Carcinogenic Potential		NR	Not Applicable
Piperonyl butoxide	51-03-6	067501	Group C--Possible Human Carcinogen	OPP (6/7/95)	RfD and MOE Approaches	Increased incidence of hepatocellular tumors (M & F) (adenomas, carcinomas, combined adenomas/carcinomas in M and adenomas in F; CD-1 mice
Pirimicarb	23103-98-2	106101	Likely to be Carcinogenic to Humans		Q1* = 3.526 E -2 (3/4)	Multiple benign and/or malignant tumors (liver, lung, ovary, mammary gland) seen in male and female Swiss mice and lung tumors in female CD-1 mice
Pirimiphos-methyl	29232-93-7	108102	Cannot Be Determined	OPP (1/29/98)	NR	Not Applicable
Polymeric Betaine		103679	Inadequate Information to Assess Carcinogenic Potential		NR	Not Applicable
Potassium dichromate	7778-50-9	068302	Not Likely to Be Carcinogenic to Humans	OPP (8/28/01)	NR	Not Applicable
Prallethrin	23031-36-9	128722	Not Likely to Be Carcinogenic to Humans	OPP (6/27/03)	NR	Not Applicable
Primisulfuron-methyl	86209-51-0	128973	Group D--Not Classifiable as to Human Carcinogenicity	OPP (5/3/90)	NR	Not Applicable
Prochloraz	67747-09-5	128851	Group C--Possible Human Carcinogen	OPP (7/1/88)	Q1* = 1.5 E-1 (2/3)	Hepatocellular adenoma & carcinoma, combined adenoma/carcinoma; CD-1 (M & F).
Procymidone	32809-16-8	129044	Group B--Probable Human Carcinogen	OPP (4/5/91)	Q1* = 1.339 E-2 (3/4)	Interstitial cell adenoma (M); Pituitary adenoma (F); Osborne-Mendel rats. Liver adenomas & combined adenomas/carcinomas; B6C3F1 mice (F). Additionally, a rare variant of hepatocellular carcinoma, hepatoblastoma, had a significant increasing trend in M B 6C3F1 mice.
Prodiamine	29091-21-2	110201	Group C--Possible Human Carcinogen	OPP (7/15/91)	RfD Approach	Thyroid follicular cell neoplasia; Pancreatic adenomas; Sprague- Dawley rats (M & F). Fibrosarcomas; CD-1 mice (M).

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Profenofos	41198-08-7	111401	Group E--Evidence of Non-carcinogenicity for Humans	OPP (2/6/95)	NR	Not Applicable
Prohexadione	127277-53-6	112600	Not Likely to Be Carcinogenic to Humans	OPP (4/14/00)	NR	Not Applicable
Prometon	1610-18-0	080804	Group D--Not Classifiable as to Human Carcinogenicity	OPP (9/17/92)	NR	Not Applicable
Prometryn	7287-19-6	080805	Group E--Evidence of Non-carcinogenicity for Humans	OPP (7/25/94)	NR	Not Applicable
Pronamide	23950-58-5	101701	Group B--Probable Human Carcinogen	OPP (5/26/93)	Q1* = 2.59 E-2 (3/4)	Benign testicular interstitial cell tumors (M); Uncommon thyroid follicular cell adenomas (M&F); Crl:CD(SD)BR rats. Hepatocellular carcinomas; B6C3F1 mice (M).
Propachlor	1918-16-7	019101	Likely to be Carcinogenic to Humans	OPP (10/16/97)	Q1* = 3.2 E-2 (3/4)	Multiple tumors/multiple sites; Rare stomach tumor; Fischer 344 rat (M); Thyroid tumors & granulosa/theca cell tumors; Sprague-Dawley rats (M & F). Hepatocellular tumors; CD-1 mice (M).
Propamocarb hydrochloride	25606-41-1	119302	Not Likely	OPP (5/31/00)	NR	Not Applicable
Propanil	709-98-8	028201	Suggestive Evidence of Carcinogenicity, but Not Sufficient to Assess Human Carcinogenic Potential	OPP (6/19/01)	NR	Testicular interstitial cell adenomas in male rats. Hepatocellular adenomas in female rats at an excessively toxic doses
Propargite	2312-35-8	097601	Group B--Probable Human Carcinogen	OPP (7/23/92)	Q1* = 1.92 E-1 (3/4)	Statistically significant increases in undifferentiated sarcomas in the jejunum; Crl:CDBR rat (M & F).
Propazine	139-40-2	080808	Not Likely to Be Carcinogenic to Humans	OPP (5/8/97)	NR	Mammary tumors in female rats (SD)
Propetamphos	31218-83-4	113601	Not Likely to Be Carcinogenic to Humans	OPP (12/2/98)	NR	Not Applicable
Propiconazole	60207-90-1	122101	Group C--Possible Human Carcinogen	OPP (9/14/92)	RfD Approach	Hepatocelluar adenomas, carcinomas, & adenomas/carcinomas combined; CD-1 mice (M).
Propoxur	114-26-1	047802	Group B--Probable Human Carcinogen	OPP (6/17/96)	Q1* = 3.69 E-3 (3/4)	Bladder carcinomas (rare), papillomas & combined combined carcinoma/ papilloma (M&F); Wistar rats. Statistically significant increases in hepatocellar adenomas & adenomas & combined adenoma/carcinoma; B6C3F1 mice (M).
Propoxycarbazone-Sodium	181274-15-7	122019	Not Likely to Be Carcinogenic to Humans		NR	Not Applicable

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Prosulfuron	94125-34-5	129031	Data Are Inadequate for an Assessment of Human Carcinogenic Potential	OPP (1/24/00)	NR	Not Applicable
Prothioconazole	178928-70-6	113961	Not Likely To Be Carcinogenic To Humans	3/5/2010	NR	Not Applicable
Pymetrozine	123312-89-0	101103	Likely to be Carcinogenic to Humans	OPP (8/24/99)	Q1* = 1.19 E-2 (3/4)	Liver tumors- Hepatomas and combined adenomas and/or carcinomas; Tif:RAIf(SPF) Sprague-Dawley rats (F). Liver carcinomas and combined hepatomas and/or carcinomas; Tif:MAGf(SPF) mice (M & F).
Pyraclostrobin	175013-18-0	099100	Not Likely to Be Carcinogenic to Humans	OPP (9/10/03)	NR	Not Applicable
Pyraflufen ethyl	129630-19-9	030090	Likely to be Carcinogenic to Humans	OPP (10/8/02)	Q1* = 3.32 E-2 (3/4)	Hepatocellular adenomas and combined adenomas, carcinomas and/or hepatoblastomas in male and female (SPF) ICR (Crj:CD-1) mice.
Pyrasulfotole	365400-11-9	000692	Suggestive Evidence Of Carcinogenic Potential	6/8/2007	NR	Eyes Wistar Rj: WI (HOPS HAN) Rat (M); Urinary Bladder C57BL/6 Mouse (M & F)
Pyrazon	1698-60-8	069601	Not Likely To Be Carcinogenic To Humans	7/28/2005	NR	Not Applicable
Pyrethrins	8003-34-7	069001	Suggestive Evidence of Carcinogenicity, but Not Sufficient to Assess Human Carcinogenic Potential	OPP (6/22/04)	NR	Liver tumors in Crl:CD® (SD)IGS BR rats (F)
Pyridaben	96489-71-3	129105	Group E--Evidence of Non-carcinogenicity for Humans	OPP (5/11/94)	NR	Not Applicable
Pyridalyl	179101-81-6	295149	Not Likely To Be Carcinogenic To Humans	4/21/2009	NR	Not Applicable
Pyridate	55512-33-9	128834	Not Likely To Be Carcinogenic To Humans	1/24/2000	NR	Not Applicable
Pyrimethanil	53112-28-0	288201	Group C--Possible Human Carcinogen	OPP (2/12/97)	MOE Approach	Thyroid follicular cell adenomas & combined adenoma/carcinoma (M); Thyroid cell adenomas (F); Sprague-Dawley rats.
Pyriproxyfen	95737-68-1	129032	Group E--Evidence of Non-carcinogenicity for Humans	OPP (9/15/95)	NR	Not Applicable

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Pyrithiobac-sodium	123343-16-8	078905	Group C--Possible Human Carcinogen	OPP (9/5/95)	Q1* = 1.05 E-3 (3/4)	Liver adenomas, carcinomas & combined adenoma/carcinoma; CD-1 mice (M). Rare kidney tubular adenomas, carcinomas & combined adenoma/ carcinoma; Crl:CDBR rats (M).
Pyroxasulfone	447399-55-5	090099	Likely To Be Carcinogenic To Humans		Q1* = 5.44 E -3 (3/4)	Urinary Bladder Crl:CD (SD) IGS BR Rat (M); Kidney Crl:CD-1 (ICR) Mouse (M)
Pyroxsulam	422556-08-9	108702	Not Likely To Be Carcinogenic To Humans	12/19/2007	NR	Not Applicable
Quinchlorac	84087-01-4	128974	Group D--Not Classifiable as to Human Carcinogenicity	OPP (8/26/92)	NR	Not Applicable
Quinoxyfen	124495-18-7	055459	Not Likely to Be Carcinogenic to Humans	OPP (1/28/03)	NR	Not Applicable
Quizalofop ethyl	76578-14-8	128711	Group D--Not Classifiable as to Human Carcinogenicity	OPP (3/17/88)	NR	Not Applicable
Resmethrin	10453-86-8	097801	Likely to be Carcinogenic to Humans		Q1* = 5.621 E-2 (3/4)	Benign and malignant liver tumors in Sprague-Dawley Female Rat and Swiss DC-Mice (1 Male Mouse)
Rimsulfuron	122931-48-0	129009	Not Likely to Be Carcinogenic to Humans	OPP (2/19/98)	NR	Not Applicable
RoteNone	83-79-4	071003	Group E--Evidence of Non-carcinogenicity for Humans	OPP (10/5/88)	NR	Not Applicable
Saflufenacil (BAS 800 H)	372137-35-4	118203	Not Likely To Be Carcinogenic To Humans	7/22/2009	NR	Not Applicable
S-Bioallethrin	28434-00-6	004004	Suggestive Evidence of Carcinogenicity, but Not Sufficient to Assess Human	OPP (10/29/03)	NR	Renal tubular adenomas in male Sprague-Dawley Crl-CD-SD(BR) rats
Sethoxydim	74051-80-2	121001	Not Likely to Be Carcinogenic to Humans	OPP (3/19/03)	NR	Not Applicable
Simazine	122-34-9	080807	Not Likely to be Carcinogenic to Humans	OPP (5/24/90)	NR	Neuroendocrine disruption MOA
s-Metolachlor	87392-12-9	108800	Group C--Possible Human Carcinogen	(OPP (11/16/94)	MOE Approach	Liver adenomas and combined adenomas/carcinomas; Charles River CD (SD)BR rats (F).
Sodium bentazon	50723-80-3	103901	Group E--Evidence Of Non-Carcinogenicity For Humans	3/8/2006	NR	Not Applicable
Sodium omadine	15922-78-8	088004	Group D--Not Classifiable as to Human Carcinogenicity	OPP (5/16/95)	NR	Not Applicable

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Spinetoram	187166-40-1 + 187166-15-0	110008	Not Likely To Be Carcinogenic To Humans	3/25/2010	NR	Not Applicable
Spinosad	131929-60-7	110003	Not Likely to Be Carcinogenic to Humans	OPP (6/17/97)	NR	Not Applicable
Spirodiclofen	148477-71-8	124871	Likely to be Carcinogenic to Humans		Q1* = 1.49 E-2 (3/4)	Testicular Leydig cell tumors in male Wistar rats, uterine tumors in female Wistar rats; and liver tumors in both sexes of CD-1 mice
Spiromesifen	283594-90-1	024875	Not Likely To Be Carcinogenic To Humans	12/18/2008	NR	Not Applicable
Spirotetramat	203313-25-1	392201	Not Likely To Be Carcinogenic To Humans	3/26/2009	NR	Not Applicable
Spiroxamine	118134-30-8	120759	Not Likely to Be Carcinogenic to Humans	OPP (11/14/03)	NR	Not Applicable
Sulfentrazone	122836-35-5	129081	Group E--Evidence of Non-carcinogenicity for Humans	OPP (5/7/96)	NR	Not Applicable
Sulfosate	81591-81-3	128501	Group E--Evidence of Non-carcinogenicity for Humans	OPP (7/26/94)	NR	Not Applicable
Sulfosulfuron	141776-32-1	085601	Likely to be Carcinogenic to Humans	OPP (10/28/98)	Q1* = 1.03 E-3 (3/4)	Rare transitional cell papilloma & carcinoma of the urinary bladder in females; Sprague-Dawley rats. Rare mesenchymaltumors of the urinary bladder in male as well as renal adenomas in male and female CD-1 mice.
Sulfuryl fluoride	2699-79-8	078003	Not Likely to Be Carcinogenic to Humans	OPP (5/24/01)	NR	Not Applicable
Sulprofos	35400-43-2	111501	Group E--Evidence of Non-carcinogenicity for Humans	OPP (3/26/96)	NR	Not Applicable
Sumithrin	26002-80-2	069005	Not Likely to Be Carcinogenic to Humans		NR	Not Applicable
Tau-fluvalinate	102851-06-9	109302	Not Likely To Be Carcinogenic To Humans	9/29/2005	NR	Not Applicable
TCMTB (Busan 72)	21564-17-0	035603	Group C--Possible Human Carcinogen	OPP (8/28/96)	RfD Approach	Testicular interstitial cell adenomas (M); Thyroid c-cell adenomas (F); Sprague-Dawley rats.

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Tebuconazole	107534-96-3	128997	Group C--Possible Human Carcinogen	OPP (9/15/93)	RfD Approach	Statistically significant increase in the incidence of hepatocellular adenomas, carcinomas & combined adenomas/carcinomas both by positive trend & pairwise comparisons; NMRI mice (M & F).
Tebufenozide	112410-23-8	129026	Group E--Evidence of Non-carcinogenicity for Humans	OPP (8/29/94)	NR	Not Applicable
Tebufenpyrad	119168-77-3	090102	Suggestive Evidence of Carcinogenicity, but Not Sufficient to Assess Human Carcinogenic Potential	OPP (5/15/02)	NR	Hepatocellular adenomas in male and female F344 rats
Tebuthiuron	34014-18-1	105501	Group D--Not Classifiable as to Human Carcinogenicity	OPP (3/1/91)	NR	Not Applicable
Telone	542-75-6	029001	Group B--Probable Human Carcinogen	OPP (4/15/99)	Q1* = 1.3 E-5 (3/4) (Inhalation)	Forestomach, liver, mammary, thyroid, adrenal, urinary & lung tumors; Fischer 344 rats & B6C3F1 mice (M & F). Bronchioloaveolar adenomas; B6C3F1 mice (M).
Tembotrione	335104-84-2	012801	Suggestive Evidence of Carcinogenic Potential	9/7/2007	NR	Eyes Wistar Rat (M)
Tepraloxydim	149979-41-9	121005	Data Are Inadequate for an Assessment of Human Carcinogenic Potential	OPP (2/26/01)	NR	Not Applicable
Terbacil	5902-51-2	012701	Group E--Evidence of Non-carcinogenicity for Humans	OPP (9/30/94)	NR	Not Applicable
Terbufos	13071-79-9	105001	Group E--Evidence of Non-carcinogenicity for Humans	OPP (2/1/94)	NR	Not Applicable
Terbuthylazine	5915-41-3	080814	Group D--Not Classifiable as to Human Carcinogenicity	OPP (8/24/94)	NR	Not Applicable
Terbutryn	886-50-0	080813	Group C--Possible Human Carcinogen	OPP (3/3/88)	NR	Mammary (adenomas/adenocarcinomas) and Liver (adenomas/carcinomas) in female CD rats; Thyroid follicular (adenomas/carcinomas)and Testicular interstitial cell adenomas in male CD rats.
Terrazole	2593-15-9	084701	Group B--Probable Human Carcinogen	OPP (1/9/91)	Q1* = 3.33 E-2 (3/4)	Multiple tumors (liver, bile duct, mammary gland, thyroid & testes) & cholangiocarcinoma (a rare tumor); Sprague-Dawley rats (M & F).

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Tetrachlorvinphos	961-11-5	083701	Likely to be Carcinogenic to Humans	OPP (3/7/02)	Q1* = 1.83 E-3 (3/4)	Hepatocellular carcinomas & combined adenomas/carcinomas; B6C3F1 mice (F). Thyroid C-cell adenomas & adrenal pheochromocytomas; Sprague-Dawley rats (M).
Tetraconazole	112281-77-3	120603	Likely to be Carcinogenic to Humans	OPP (1/11/00)	Q1* = 2.3 E-2 (3/4)	Hepatocellular adenomas, carcinomas and combined adenomas/carcinomas in both sexes; Crl:CD-1 (ICR) mice
Tetramethrin	7696-12-0	069003	Group C--Possible Human Carcinogen	OPP (12/11/89)	NR	Interstitial cell adenomas in the testes (M); CR CD-1 & CRCD Sprague-Dawley, Long-Evans Hooded rats.
Thiabendazole	148-79-8	060101	Multiple Descriptors: Likely to be Carcinogenic to Humans at High Does; Not Likely to be Carcinogenic to Humans at Low Doses	OPP (3/8/02)	MOE Approach	Thyroid follicular cell adenomas and combined adenomas/carcinomas in M&F Sprague-Dawley Crl:CD BR rats
Thiacloprid	111988-49-9	014019	Likely to be Carcinogenic to Humans	OPP (3/26/03)	Q1* = 4.06 E-2 (3/4)	Thyoid follicular cell adenomas in male Wistar rats; uterine adenomas, adenocarcinomas and/or adenosquamous carcinomas in female Wistar rats; ovarian luteomas in female B6C3F mice.
Thiamethoxam	153719-23-4	060109	Not Likely to Be Carcinogenic to Humans	OPP (6/20/00)	NR	Liver tumors in mice
Thiazopyr (MON 13200)	117718-60-2	129100	Group C--Possible Human Carcinogen	OPP (5/25/94)	MOE Approach	Statistically significant increase in thyroid follicular cell tumors (M). Increases in renal tubular adenomas (M & F); however statisti- cally significant positive trend in F only; Sprague-Dawley rats.
Thidiazuron	51707-55-2	120301	Not Likely To Be Carcinogenic To Humans	8/31/2005	NR	Not Applicable
Thiencarbazone-methyl	317815-83-1	015804	Not Likely To Be Carcinogenic To Humans at doses that do not cause urothelium cytotoxicity	6/25/2008	NR	Not Applicable
Thifensulfuron methyl	79277-27-1	128845	Not Likely To Be Carcinogenic To Humans	1/29/2010	NR	Not Applicable
Thiobencarb (Bolero)	28249-77-6	108401	Group D--Not Classifiable as to Human Carcinogenicity	OPP (6/10/96)	NR	Not Applicable
Thiocyclam hydrogen oxalate	31895-22-4	128868	Group D--Not Classifiable as to Human Carcinogenicity	OPP (9/15/94)	NR	Not Applicable
Thiodicarb	59669-26-0	114501	Group B--Probable Human Carcinogen	OPP (6/10/96)	MOE Approach	Liver tumors (malignant & benign); CD-1 mice (M & F). Testicular interstitial cell tumors; Sprague-Dawley rat (M).

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Thiophanate-methyl	23564-05-8	102001	Likely to be Carcinogenic to Humans	OPP (12/8/01)	Q1* = 1.16 E-2 (3/4)	Hepatocellular adenomas (M & F); Combined adenomas, carcinomas and/or hepatoblastomas (M); CD-1 mice. Thyroid follicular cell adenomas (M & F); Thyroid follicular cell carcinomas as well as combined adenomas and/or carcinomas (M); F344 rats.
Thiram	137-26-8	079801	Not Likely to Be Carcinogenic to Humans	OPP (4/14/03)	NR	Not Applicable
Tolyfluanid	731-27-1	309200	Likely to be Carcinogenic to Humans	OPP (5/01/02)	Q1* = 1.59 E-3 (3/4)	Thyroid tumors in male and female Wistar rats.
Topramezone	210631-68-8	123009	Multiple Descriptors: Not Likely to be Carcinogenic to Humans at Doses that Do Not Alter Rat Thyroid Hormone Homeostasis		NR	Thyroid follicular cell in both sexes of Wistar rats; Anti-thyroid MOA
Tralkoxydim	87820-88-0	121000	Suggestive Evidence of Carcinogenicity, but Not Sufficient to Assess Human Carcinogenic Potential	OPP (6/30/04)	NR	Benign testicular tumors in male rats and equivocal evidence of benign sex cord stromal tumors in female hamsters.
Triadimefon	43121-43-3	109901	Group C--Possible Human Carcinogen	OPP (12/4/96)	RfD Approach	Borderline statistically significant increase thyroid adenomas; Wistar rats (M). Hepatocelular adenomas; NMRI mice (M & F).
Triadimenol	55219-65-3	127201	Group C--Possible Human Carcinogen	OPP (1/29/88)	NR	Liver (hepatocellular adenomas); CF1/W74 mice (F).
Triallate	2303-17-5	078802	Group C--Possible Human Carcinogen	OPP (1/12/94)	Q1* = 7.17 E-2 (3/4)	Hepatocellular carcinomas (M); Positive trend & a boderline signifi- cant increase in these tumors in females; B6C3F1 mice. Increased incidence of renal tubular cell adenoma (rare tumor type); Sprague-Dawley rat (M)
Triasulfuron	82097-50-5	128969	Group E--Evidence of Non-carcinogenicity for Humans	OPP (3/11/91)	NR	Not Applicable
Triazamate	112143-82-5	128100	Not Likely to Be Carcinogenic to Humans	OPP (12/1/97)	NR	Not Applicable
Tribenuron methyl	101200-48-0	128887	Group C--Possible Human Carcinogen	OPP (7/14/89)	NR	Mammary gland adenocarcinomas; Sprague-Dawley rats (F).
Tribufos	78-48-8	074801	Multiple Descriptors: Likely to be Carcinogenic to Humans (High Doses); Not Likely to be Carcinogenic to Humans (Low	OPP (5/22/97)	MOE Approach	Liver (hemangiosarcoma) (M), Lung (alveolar/bronchiolar adenoma) (F), Small intestine (adenocarcinoma) (M & F); CD-1 mice.

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Tributyltin maleate (oxide)	14275-57-1	083118	Cannot Be Determined Group D--Not Classifiable As To Human Carcinogenicity	3/31/2005	NR	Not applicable
Trichlorfon	52-68-6	057901	Multiple Descriptors: Likely to be Carcinogenic to Humans (High Doses), Not Likely to be Carcinogenic to Humans (Low Doses)	OPP (7/15/99)	NR	Tumors of the kidneys (adenomas) in male F344 rats & tumors of the lungs in both sexes (adenomas/carcinomas in M; carcinomas in F). Mammary tumors in female CD-1 mice.
Triclopyr	55335-06-3	116001	Group D--Not Classifiable as to Human Carcinogenicity	OPP (5/8/96)	NR	Not Applicable
Triclosan	3380-34-5	054901	Not Likely To Be Carcinogenic To Humans	10/22/1998	NR	Liver CD-1 Mouse (M & F)
Tridiphane	58138-08-2	123901	Group C--Possible Human Carcinogen	OPP (4/22/86)	NR	Liver (hepatocellular adenomas, adenomas/carcinomas combined); B6C3F1 mice (F).
Trifloxystrobin	141517-21-7	129112	Not Likely to Be Carcinogenic to Humans	OPP (6/16/99)	NR	Not Applicable
Trifloxysulfuron	290332-10-4	119009	Not Likely to Be Carcinogenic to Humans	OPP (7/22/03)	NR	Not Applicable
Triflumizole	68694-11-1	128879	Group E--Evidence of Non-carcinogenicity for Humans	OPP (8/10/93)	NR	Not Applicable
Trifluralin	1582-09-8	036101	Group C--Possible Human Carcinogen	OPP (4/11/86)	Q1* = 2.93 E-3 (3/4)	Thyroid (follicular cell adenomas & carcinomas); Neoplasms of the renal pelvis (M); Benign urinary bladder tumors (F); Fischer 344 rats.
Triflusulfuron-methyl	126535-15-7	129002	Group C--Possible Human Carcinogen	OPP (5/28/96)	RfD Approach	Testicular interstitial cell adenomas; CD-1 rat (M).
Triforine	26644-46-2	107901	Suggestive Evidence of Carcinogenicity, but Not Sufficient to Assess Human Carcinogenic Potential	OPP (6/29/04)	NR	Liver tumors in male mice and lung tumors in female mice only at the limit dose.
Trinexapac-Ethyl	95266-40-3	112602	Not Likely To Be Carcinogenic To Humans	9/5/2008	NR	Not Applicable
Triphenyltin hydroxide (TPTH)	76-87-9	083601	Group B--Probable Human Carcinogen	OPP (5/24/90)	Q1* = 1.83 E-0 (3/4)	Pituitary gland adenoma (F); Leydig cell tumors (M); Wistar rat. Hepatocellular adenomas (M & F); combined hepatocelluar (adenomas and/or carcinoma) (F); NMRI mice.
Triticonazole	131983-72-7	125620	Not Likely to be Carcinogenic to Humans		NR	Not Applicable

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Troysan polyphase (IPBC)	55406-53-6	107801	Not Likely to Be Carcinogenic to Humans	OPP (12/4/96)	NR	Not Applicable
UDMH	57-14-7	600018	Group B--Probable Human Carcinogen	OPP (7/26/91)	Q1* = 4.6 E-1 (2/3)	Multiple sites (eg. lungs, vessels, liver & kidney); Multiple species, strains & studies.
UMP-488 (PAL 6000)	111578-32-6	129025	Group E--Evidence of Non-carcinogenicity for Humans	OPP (5/6/94)	NR	Not Applicable
Uniconazole	83657-22-1	128976	Group C--Possible Human Carcinogen	OPP (10/11/90)	NR	Hepatocellular adenomas, carcinomas & adenomas/carcinomas combined; CD-1 mice (M).
Vinclozolin	50471-44-8	113201	Group C--Possible Human Carcinogen	OPP (6/20/00)	MOE Approach	Leydig cell adenomas; Wistar rats (M)
Zeta-Cypermethrin	52315-07-8	129064	Group C--Possible Human Carcinogen	OPP (9/27/88)	NR	Benign lung adenomas (increase in both adenomas and adenomas/ carcinomas combined); Alderly Park SPF Swiss strain mice (F).
Ziram	137-30-4	034805	Suggestive Evidence of Carcinogenicity, but Not Sufficient to Assess Human Carcinogenic Potential	OPP (2/6/03)	NR	Hemangiomas in male CD(SD)BR rats; increasing trend in preputial gland adenomas in male F344 rats
Zoxamide	156052-68-5	101702	Not Likely to Be Carcinogenic to Humans	OPP (12/16/99)	NR	Not Applicable